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Historically, economic education has been predominantly characterized by low student achievement, lack of teacher preparation, and quantitative research findings. Detailed descriptions of what effective economic instruction looks like in secondary classrooms remain scarce. Therefore, the purpose of this qualitative case study was to gain an in-depth understanding of how the personal orientations toward economics of three award-winning secondary economic teachers influenced their instruction and how these teachers demonstrated their pedagogical content knowledge (PCK) in their instruction. Specifically investigated was how the economic teachers demonstrated horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students. Data collection methods included classroom observations, teacher interviews and questionnaires, student surveys and tests, and artifacts.

Guided by a PCK theoretical framework, a qualitative analysis of the data suggested that the most influential personal orientation factors included the teachers' life and professional experiences, disciplinary background, political leanings, economic course beliefs, and economic instructional goals. All three teachers consistently demonstrated their PCK by connecting economic content to other grades and subjects as well as other economic concepts and skills. Economic content was also regularly used to prepare students for citizenship, including casting more informed votes and

understanding current events. However, authentic discussions and controversial issues were mostly lacking. An emphasis was placed on developing students' economic reasoning skills, including real-world applications of the economic way of thinking and decision making models. Active learning instructional practices were also frequently incorporated, and economic content was almost always related to students' interests and experiences. Modest gains were achieved in students' economic attitudes and knowledge midway through the yearlong course. Implications for classroom instruction and teacher education include teaching a basic economic course focused on life skills, integrating more assignments in social studies methods courses that develop PCK in economics, and offering an economic methods course.

A QUALITATIVE STUDY OF THE PEDAGOGICAL CONTENT KNOWLEDGE AND PERSONAL ORIENTATIONS TOWARD ECONOMICS OF AWARD-WINNING SECONDARY ECONOMICS TEACHERS

by

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My most heartfelt thanks to my Mom and Dad for their endless love, support, and cheerleading all the way to the finish line. I could not have done it without you.

APPROVAL PAGE

This dissertation written by Cheryl Ann Ayers has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

Nearly half of adults and two-thirds of high school students in the United States do not understand the most basic economic concepts (CEE, 1999; Harris, 2005) such as the role of *supply* and *demand* in setting consumer *prices* and the ways in which both *free markets* and government sometimes fail to generate economic growth. Moreover, only 22 states currently require students to take a separate economic course to graduate, while only 16 states require student testing of economic concepts (CEE, 2014). This low prioritization of the study of economics is especially concerning in a democratic nation that depends on an informed citizenry to make productive and prosperous decisions not only on an individual basis but on a societal level as well (Walstad, 1998).

Similar sentiments regarding the importance of economic education is expressed by 97% of Americans who believe that economics should be taught in our nation's schools (Harris Interactive, 2005). However, low levels of economic understanding have predominately characterized U.S. citizens since the inception of economic education standardized testing in 1976 (Becker, Greene, & Rosen, 1990). On average, both adults and high school students have consistently earned a failing test score on the Test of Economic Literacy (TEL), the most commonly administered standardized test in secondary economics (Harris Interactive, 2005; Walstad & Rebeck, 2001), despite the

commonly agreed upon importance of U.S. citizens having a basic understanding of economics (VanFossen, 2005-2006).

Student Achievement Scores in Economics

Low student achievement in economics at the secondary level has been reported for most high school students enrolled in separate economic courses as well as in other social studies courses in which economics is integrated (Becker, Greene, & Rosen, 1990; Miller & VanFossen, 2008; Schug & Walstad, 1991). For example, Walstad and Soper (1989) analyzed the TEL scores from a national sample of high school students, discovering that pre/post-test scores were approximately the same for students enrolled in consumer economic courses and other social studies courses, with and without economics infused. While students in the economic course that focused strictly on economic content had statistically significant gains in their pre/post-test scores, the average post-test score would receive a failing grade according to current grading standards, for both students in economic courses and students in other social studies courses where economics was integrated—an average score of 52% and 48%, respectively (Clark & Davis, 1992).

In a related study almost a decade later, Walstad and Rebeck (2001) found that there was an increase in economic understanding by students who had taken an economic course, with an average post-test score of 61% (up from 52%). Conversely, there was a seven percentage point decrease in average post-test scores for students in social studies courses where economics was infused, with a score of 41% (down from 48%). Translated, the students in the economic course answered eight more questions correctly,

out of 40 questions total, than students in other social studies courses. Regardless, all post-test scores still qualified as a failing grade under most grading standards.

Despite these enduring low levels of student achievement in economics, a bit of good news is afforded by the first-ever National Assessment of Educational Progress (NAEP) exam in economics administered in 2006. In alignment with Council for Economic Education's (CEE) 20 *Voluntary National Content Standards in Economics,* the NAEP exam is the result of much anticipation since No Child Left Behind (NCLB) legislation mandated that economics would be one of the subjects tested at regular intervals (Watts & Walstad, 2011). A national representative sample of more than 11,000 high school seniors took the exam, and while the test scores indicate to some degree that gaps exist in students' understanding of basic economic concepts, 79% of the students performed at or above the basic level, 42% performed at or above the proficient level, and 3% performed at the advanced level (Clark, Schug, & Harrison, 2009; NAEP, 2007). Additionally, Schug, Harrison, and Clark (2012) reported, albeit cautiously, the fact that student achievement levels on the NAEP exam in economics were generally higher than the student achievement levels on other 2010 NAEP exams in history, civics, and geography.

The NAEP exam was administered again in 2012, and its results were identical for students scoring at the proficient and advanced levels; although, significant gains were achieved by lower performing students, raising the percentage of students who scored at or above the basic level from 79% in 2006 to 82% in 2012 (NAEP, 2013). While it remains largely unknown, Schug et al. (2012) speculate that one reason why

NAEP scores project a more favorable light on student achievement in economics than TEL scores is because of the recent widespread use of CEE's national standards, minimizing the differences in determining which economic concepts and principles are most important. However, a more conclusive understanding of what improves student achievement in economics requires empirical evidence regarding what economic teachers need to know and be able to do (Bransford, Darling-Hammond, & LePage, 2005) to deliver effective economic instruction.

Economic Education Research and Teacher Preparation

Beyond quantitative reports of test score data, a review of the research base for economic education quickly reveals a scarcity of literature (Miller & VanFossen, 2008; Schug & Walstad, 1991) relative to other social studies subjects such as history and civics. Nonetheless, potential factors contributing to consistently low economic test scores have been sparingly investigated by some of the field's leading researchers. One such contributing factor is the incomplete and often inaccurate integration of economic concepts into other social studies courses (Buckles & Watts, 1998), a popular yet problematic alternative to offering a separate course in economics (Miller & VanFossen, 2008; Schug & Walstad, 1991).

In several studies, economic education researchers have also calculated a positive correlation between teacher content knowledge in economics—as measured by coursework completed for secondary social studies teacher licensure—and student achievement in economics (Schug & Walstad, 1991; Walstad & Van Scoyc, 1990). Specifically, a minimum of four to six economic courses was found to produce the

greatest statistically significant gains in both teacher and student learning in economics when measured by standardized test scores (Allgood & Walstad, 1999; Lynch, 1990). The mean number of courses, however, required by 27 state teacher licensure programs in secondary social studies is approximately one course, or exactly 3.9 semester hours (Dumas, Evans, & Weible, 1997), which compounds the consequences of most teachers not choosing economics as their concentration of study as required by the National Council for the Accreditation of Teacher Education (NCATE) certification guidelines (Miller & VanFossen, 2008). Attesting to this unpreparedness of teachers is my own ten years of professional experiences as the director of Grades K-12 economic education professional development for five to thirteen school districts in a southeastern state. The vast majority of the nearly 400 teachers I served each year did not understand the most basic economic concepts such as the role of *competition* in keeping product prices low and product quality high or the importance of considering *opportunity costs*—what you give up—when making everyday decisions.

Other research studies also attempt to quantitatively explain contributing factors to the long history of low economic test scores such as the types of economic textbooks utilized as well as teacher and student attitudes toward economics (Walstad & Van Scoyc, 1990). However, at the conclusion of their economic education literature reviews, both Schug and Walstad (1991) and Miller and VanFossen (2008) call for qualitative, observational studies to investigate specific instructional strategies at the secondary level that are most effective in improving students' economic understanding and skills. This call for research is in keeping with what other education scholars argue is necessary to

improve instruction, which is for researchers to focus more on instructional practices rather than teacher credentials in pursuit of understanding what helps students learn (Ball & Forzani, 2009; Grossman & McDonald, 2008; Hiebert & Morris, 2012).

Likewise, Shulman (1987) called for an increase of "wisdom of practice" case studies that systematically investigate and report the interactions between teacher knowledge and instructional practices demonstrated by exemplary teachers. According to Shulman, "One of the more important tasks for the research community is to work with practitioners to develop codified representations of the practical pedagogical wisdom of able teachers" (p. 11) with emphasis on understanding pedagogical content knowledge (PCK)—"the blending of content and pedagogy" unique to each subject area (p. 8). Findings from such studies should serve as standards of practice for each subject area and should be taught to preservice and inservice teachers (Heibert & Morris, 2012; Shulman, 1987). In other words, zeroing in on actual teacher knowledge and instructional practices unique to particular subject areas is necessary in developing a "practice-based conceptualization of content knowledge for teaching" (Ball, Thames, & Phelps, 2008, p. 398). For the purposes of this study, such content knowledge for teaching were delineated into the following four domains: *specialized content knowledge*, describing discipline knowledge and skills used exclusively by teachers; *horizon content knowledge*, relating to the ways in which discipline knowledge and skills are interwoven throughout the Grades K-12 curriculum; *knowledge of content and teaching*, referring to the instructional affordances and constraints of pedagogical strategies unique to each

discipline; and *knowledge of content and students*, representing the intersection of discipline knowledge and skills and student knowledge (Ball, 1993; Ball et al., 2008).

Therefore, this qualitative case study sought to gain an in-depth understanding of the PCK in economics demonstrated by three exemplary secondary economic teachers and how their personal orientations toward economics influenced instruction. Each of the three teachers was the winner of the Outstanding Economic Educator Award within the last four years at the time of the study, given by the director of the local Center for Economic Education. The award was given annually to teachers who demonstrated a sustained commitment to economic education over the course of their teaching careers. Specifically, teacher award winners were required to demonstrate excellence according to the following three award criteria: leadership in economic education, professional development in economic education, and student comprehension and achievement in economic education. One to two letters of recommendation were also considered in selecting teacher award winners.

Research Questions

This study investigated the PCK of three exemplary teachers—one social studies teacher and two Career and Technical Education (CTE) teachers—of an economic course in a southeastern state that requires all high school students to take the course for graduation. Using classroom observations, teacher interviews, teacher questionnaires, student pre/post-surveys, student pre/post-tests, and teacher and student artifacts, I sought to conceptualize what economic teachers need to know and be able to do in order to deliver quality economic instruction at the secondary level. Specifically, I set out to

provide meaningful descriptions of PCK needed by effective economic teachers and to better understand how teachers' personal orientations toward economics influenced their instruction.

The following two research questions guided this study:

1. What factors shape the personal orientations of award-winning secondary economic teachers toward economics, and how do these factors influence their instruction?
2. How do award-winning secondary economic teachers demonstrate pedagogical content knowledge (PCK) in their instruction in terms of horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students?

Significance of the Study

Related to this study, Schug and Baumann (1991) conducted an interview study with exemplary secondary economic teachers who were nominated by their local Center for Economic Education directors. Teachers were asked to describe their students' common misconceptions of specific economic concepts (e.g., *demand*, *supply*, and *money creation*) as well as related instructional practices particularly effective in remedying these misconceptions. Building on these findings, the present study takes a more in-depth look at the myriad of other types of teacher knowledge needed to effectively teach economics at the secondary level, as defined by Shulman's (1987) construct of PCK. The present study also builds on Shulman's earlier work where he and his colleagues observed experienced teachers providing instruction on subject-specific topics and units

that were often difficult for beginning teachers to deliver. Of special interest were the interactions between content knowledge and pedagogical knowledge—that is, PCK. PCK as the theoretical framework of this study facilitated a subject-specific way of understanding the various forms of teacher knowledge and skills needed to effectively teach secondary economics. The PCK framework is a compilation of the work of various PCK scholars and designed to be an unassuming lens through which to gather data.

From a practical standpoint, this study was designed to begin a dialogue among educational stakeholders about teachers' personal orientations toward economics and the types of teacher knowledge and skills needed for effective economic instruction that might contribute to increasing student achievement in economics and better preparing students for citizenship. Specifically, the results of this study will hopefully improve secondary economic instruction delivered by social studies and CTE teachers. This new understanding of effective economic instruction also has educational implications for rethinking economic curricula, professional development, teacher education, and future research agendas. Improved economic instruction will be particularly important in light of the increasing number of states that require students to take a semester of economics for high school graduation.

Organization of the Dissertation

This introductory chapter, Chapter 1, explains the rationale behind conducting this research study, motivated by the historically low student achievement scores in secondary economics as well as the literature gap and limited teacher preparation in economic education. Also included are the research questions that guided the entire research

process. In Chapter 2, I review the literature related to and including Shulman's (1986) original conceptualization of PCK and Ball, Thames, and Phelps' (2008) related refinements, which serve as the theoretical framework of this study. PCK research conducted in social studies education is also discussed. The second part of Chapter 2 takes a look at economic education research, much of which is dated, that was conducted specifically in connection to secondary economic instruction, including state and national standards, current levels of economic teachers' content knowledge, teacher orientations toward economics, and instructional practices used to teach economic concepts and economic reasoning skills. An account of the economic education literature gap concludes the chapter.

The methodology chapter of this dissertation study, Chapter 3, begins by justifying the use of a qualitative, case study design as it advanced the purpose of this study. Next, the setting of the study is explained, including descriptions of the geographic areas, schools, and three teacher participants. I then describe the methods used to collect data, followed by data analysis strategies for making sense of the data and strategies for protecting the ethics and validity of the study's findings. Chapter 4 contains the research findings in the form of thick descriptions of the teachers' personal orientations toward economics and the qualities of teacher knowledge and skills needed to effectively teach economics. Chapter 5 answers the research questions by analyzing the findings in light of the PCK theoretical framework and in the context of existing PCK and social studies literature. Implications for secondary social studies classrooms and

teacher education programs are shared, along with the limitations of the study and suggestions for future research.

CHAPTER II

REVIEW OF RELATED LITERATURE

Theoretical Framework

Understanding what teachers need to know and be able to do in order to deliver instruction that most effectively promotes student learning has been the impetus of education research for more than a century. The search for this knowledge base for teaching began in the late 1800s and presupposed that effective teachers first and foremost needed to demonstrate high levels of content knowledge; teacher behaviors and instructional practices were of secondary importance (Shulman, 1986). However, this prioritization of content knowledge later subsided to the point where Lee S. Shulman (1986), in his oft-cited Presidential Address at the 1985 American Educational Research Association annual meeting, called content knowledge the "missing paradigm" in teaching research due to its largely marginalized role in understanding highly qualified teachers. This reordering of research foci among some education scholars aligns with the debates that continue to prevail within the teaching profession today in terms of what distinguishes teachers who are successful in facilitating student achievement from teachers who are not (Ball, 2000; Bransford, Darling-Hammond, & LePage, 2005; Journell, 2013).

One reason the knowledge base for teaching has not attained widespread agreement is the highly complex and dynamic nature of teacher knowledge, which is

often difficult to conceptualize and articulate (Fenstermacher, 1994; Mishra & Koehler, 2006; Shulman, 1986, 1987). In his seminal article, Shulman (1987) advances seven categories of subject-specific teacher knowledge requisite of successful instruction: content knowledge; general pedagogical knowledge; curriculum knowledge; pedagogical content knowledge (PCK); knowledge of learners; knowledge of educational contexts; and, knowledge of educational purposes. More recently, Bransford, Darling-Hammond, and LePage (2005) set forth three overarching domains of teacher knowledge after an extensive synthesis of literature: knowledge of students and their development and learning in social contexts; knowledge of subject matter and curriculum under the auspices of the social purposes of schooling; and, knowledge of teaching that facilities challenging content for all students. The primary difference between these two descriptions of the knowledge base for teaching is that Shulman emphasizes the unique connections to specific subject areas while Bransford et al. offer more generic requirements of effective teaching irrespective of what subject is taught. In fact, Shulman insists that the knowledge base for teaching should inform subject-specific instructional practices differently, not only as a means for improved instruction but also for purposes of educational reform and the professionalization of teaching.

Therefore, in some ways, the historical debate that has polarized education scholars in terms of what type of teacher knowledge—content knowledge or pedagogical knowledge—is most influential on effective instructional practices is, in part, resolved by Shulman's (1986, 1987) proposal to embrace both types of knowledge with a particular emphasis on their intersection called PCK. Since then, education scholars have

developed different PCK definitions, theories, and models, all of which, however, have been informed by Shulman's original conception of PCK (Matthews, 2013). Much of this new scholarship has originated in mathematic education by Deborah Loewenberg Ball and her colleagues who presented some of the earliest empirical evidence that supported Shulman's notion that effective teachers combine content knowledge and pedagogical knowledge in ways that are unique to each subject area, resulting in PCK (Hill & Ball, 2004).

Pedagogical Content Knowledge (PCK) Components

PCK requires a comprehensive understanding of both content and pedagogical knowledge, as well as how these two knowledge bases intersect. This review of related PCK literature begins with content knowledge, which includes popular definitions and domains of content knowledge needed by teachers. The next section, pedagogical knowledge, discusses necessary teacher knowledge of students, curriculum, and general pedagogical practices as well as teacher orientations and instructional goals. PCK, the third section, defines PCK as originally envisioned by Shulman and other subsequent scholars including Ball and her colleagues, followed by a look at the usefulness of PCK as a theoretical framework for studying teacher instructional practices. Also explored are teacher development of PCK and the impact of PCK on student achievement. This PCK literature review concludes with a description of the PCK research conducted within the confines of secondary social studies education.

Content Knowledge

Content knowledge, according to Shulman (1986), includes "…the amount and organization of knowledge per se in the mind of the teacher" (p. 9). Building on Schwab's (1964) interpretations, Shulman agrees that content knowledge is more than concepts and theories and also includes a knowledge base defined by both *substantive structure* and *syntactic structure*. Delineating the two structures, substantive structure is defined as "the variety of ways in which the basic concepts and principles of the discipline are organized to incorporate its facts" while syntactic structure is "the set ways in which truth or falsehood, validity or invalidity are established" in a subject area (Shulman, 1986, p. 9). In other words, teachers need to also understand what counts as knowledge and inquiry in different subject areas in order to accurately instruct students (Ball & McDiarmid, 1990). Despite its clearly acknowledged importance, Shulman (1986) was adamant that "mere content knowledge is likely to be as useless pedagogically as content-free skill" especially in student-centered instructional practices (p. 8).

Ball, Thames, and Phelps (2008) developed an empirically-based PCK framework specifically for mathematic education as an extension of Shulman's PCK conceptualization, which remains highly influential today in understanding the types of mathematic teacher knowledge that lead to effective instructional practices and student learning. This new version of a PCK framework, entitled *Math Knowledge for Teaching*, divides content knowledge into three domains: *common content knowledge*, *specialized content knowledge*, and *horizon content knowledge*. Common content knowledge

includes subject-specific knowledge and skills used by teachers as well as people outside of the teaching profession, such as the ability to solve a subtraction problem and the understanding that nonmonetary costs are also incurred when taking college courses. On the other hand, specialized content knowledge consists of subject-specific knowledge and skills rarely needed by people outside the teaching profession. Examples include the knowledge and skills needed by a mathematic teacher to understand common student errors when learning *subtraction* and an economic teacher to understand common student errors when learning about *opportunity cost*. Horizon content knowledge requires that teachers understand how subject-specific topics are related across the entire Grades K-12 curriculum for a particular discipline. For example, economic teachers should know that the economic concept *opportunity cost* taught in primary grades is foundational to understanding *production possibilities curves* and *comparative advantage*, economic concepts taught in secondary grades. While no economic education scholarship currently separates economic content knowledge into these three domains, Table 1 explicates the aforementioned mathematic and economic examples, suggesting what common, specialized, and horizon content knowledge might look like for a mathematic and economic teacher.

Table 1

Examples of Content Knowledge Domains in Mathematics and Economics

Content Knowledge Domains (Ball et al., 2008)	Mathematics (Ball et al., 2008)	Economics (Schug & Baumann, 1991)
Common Content Knowledge	Both adults and mathematic teachers have the mathematical knowledge to solve the following subtraction problem using a simple algorithm which "borrows" one from the hundreds column: 307 - 165 --------- 142	Both adults and economic teachers have the economic knowledge to know that when one decides to enroll in college courses, there are nonmonetary costs such as reduced recreational time.
Specialized Content Knowledge	Only mathematic teachers typically have the mathematical knowledge and experience to quickly identify the mathematical error frequently committed by students who simply subtract the smaller number from the larger number in each column: 307 - 165 -------- 262	Only economic teachers typically have the economic knowledge and experience to know that students often associate opportunity cost with a dollar amount rather than the most valued alternative forgone, which could be monetary or nonmonetary. In the case of college enrollment, the opportunity cost for an individual might be time away from family rather than the actual price of tuition.
Horizon Content Knowledge	Mathematic teachers are cognizant of the need for students to learn subtraction because it is fundamental to learning division in later grades.	Economic teachers revisit the concept of opportunity cost when teaching economic concepts such as production possibilities curves and comparative advantage in later grades.

Pedagogical Knowledge

As the focus on teacher knowledge shifted from content to pedagogy by the 1980s, Shulman (1987) warned against advocating for generic instructional practices across all subject areas in light of the situated nature of classroom realities. Specifically, he suggested that "…great danger occurs…when a general teaching principle is distorted into prescription, when maxim becomes mandate" (p. 11). Even decades earlier, Dewey (1916) offered a similar cautionary note by claiming that when teaching "…becomes cast in a mold and runs in a routine way…it lose[s] its educative power" (p. 6). Even so, Shulman and most PCK models still recognize general pedagogical knowledge as a necessary ingredient to quality instruction, although to a lesser extent than previously believed. Such pedagogical knowledge, according to Shulman (1987) included "broad principles and strategies of classroom management and organization that appear to transcend subject matter" (p. 8). Put another way, pedagogical knowledge includes a generic type of knowledge that informs all teaching practices related to student learning, ranging from understanding developmental theories of learning to lesson plan creation and delivery to student assessment (Mishra & Koehler, 2006).

Similar to horizon content knowledge, c*urricular knowledge*, as briefly defined by Shulman (1986, 1987), requires teachers to have a "particular grasp of the [instructional] materials and programs that serve as 'tools of the trade' for teachers" (p. 8) in "particular subjects and topics at a given level" (p. 10). Shulman extended his definition of curricular knowledge to also include *lateral knowledge* and *vertical knowledge* of the curriculum. Having lateral knowledge means that teachers are able to connect their

subject-specific curriculum to the curricula students are learning about in other subject areas. Vertical knowledge is held by teachers who are familiar with the topics students will learn about within the same subject area in the years preceding and following the present year. However, disagreement exists about the degree of impact curricular knowledge has on teacher effectiveness. Some science education scholars have found the curriculum to be "the single most powerful determinant of teacher knowledge, serving as both its organizer and source'' (Arzi & White, 2007, p. 221). Conversely, social studies scholars argue that teachers need to have knowledge beyond curricular knowledge when students ask questions that force teachers to "go off script" when discussing current civic issues (Journell, 2013). Others argue that "standards and textbooks are not curriculum" except for teachers who lack sufficient content knowledge and subject-specific instructional practices (Bain & Mirel, 2006).

Teacher beliefs about the world at large or about particular subject areas are formed through years of complex experiences unique to each teacher's own upbringing, life choices, and disciplinary backgrounds. It stands to reason, then, that what teachers believe about the subjects they teach likely differs. Examples of subject-specific teacher orientations that have been found to impact instructional practices include the "nature of science" orientation (Borko & Putnam, 1996), "knowledge about mathematics" vs. "knowledge of mathematics" orientation (Ball, 1990), and English literature text analysis orientations (Grossman, 1990). Social studies teacher orientations, as determined by the disciplinary focus of the coursework completed for licensure (e.g., political science or

sociology), also influenced the ways in which these teachers taught history at the secondary level (Wilson & Wineburg, 1988).

Teacher orientations also play a role in guiding day-to-day teacher instructional decisions ranging from lesson objectives, instructional materials and practices, and student assessments (Borko & Putnam, 1996; Grossman, 1990). Instructional goals not only impact daily instructional practices—more than PCK in some cases (Barton & Levstik, 2004)—but also teachers' own learning (Hammerness et al., 2005; Shulman & Shulman, 2004). If fact, for some preservice and inservice teachers, instructional goals have the greatest impact on their instructional practices (Adler, 1984; Grant, 2003; Van Hover & Yeager, 2007).

General pedagogical knowledge is perhaps the type of teacher knowledge hardest to define, simply based on the fact that so many theories of teaching flood its literature base. However, several teaching theories that are often cited as effective instructional practices are of particular interest to this study. One such theory is thoughtfully adaptive teaching (Duffy, 2005; Fairbanks et al., 2010), also called adaptive expertise (Bransford, Derry, Berliner, Hammerness, & Beckett, 2005), which allows teachers to spontaneously select instructional practices most effective in taking students to the next level of comprehension based on the unpredicted nature of student interests, abilities, and prior knowledge demonstrated. Authentic instructional practices also shed insight into what pedagogical knowledge effective teachers likely need to support student learning, including the following five standards: higher-order thinking tasks; in-depth understanding of content; connections to real life outside of the classroom; meaningful

conversation; and, high learning standards and an equitable learning environment (Newmann & Wehlage, 1993). Such authentic instructional practices provide students with opportunities to engage in classroom discussions, including discussions about controversial issues (Hess, 2002; Journell, 2011, 2013; Kelly, 1986; Parker & Hess, 2001), regularly incorporate culturally relevant teaching practices (Gay, 1993; Ladson-Billings, 1995), and use high-level challenge tasks to increase motivation and learning, especially in struggling students (Miller, 2003).

Pedagogical Content Knowledge (PCK)

Of special importance in studying subject-specific teacher instruction is Shulman's (1987) notion of PCK, which attempts to bridge the content versus pedagogy divide. While Shulman believes that having both content knowledge and pedagogical knowledge are important elements of a teacher's knowledge base, he argued that, in isolation, they were insufficient in understanding the highly nuanced teacher knowledge base used by exemplary teachers when delivering instructional practices that improve student learning in particular subject areas. Consequently, Shulman introduced PCK as a new category of teacher knowledge defined as

> …the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. Pedagogical content knowledge is the category most likely to distinguish the understanding of the content specialist from that of the pedagogue. (p. 8)

That is, effective teachers not only need to have a firm grasp of the most important content in a subject area but also "the most useful forms of representation of those ideas,

the most powerful analogies, illustrations, examples, explanations, and demonstrations—in a word, the ways of representing and formulating the subject that make it comprehensible to others" (p. 9). It is what separates a biology major from a biology teacher, according to Shulman (1986).

Known as the "bridge between academic world of disciplinary knowledge and the practice world of teaching" (Ball et al., 2008, p. 398), PCK has remained influential across subject areas since its inception by providing a framework within which to describe the types of knowledge teachers need to deliver quality instruction. This unique blend of content and pedagogy has, however, been interpreted and applied differently by various education researchers (e.g., Ball et al., 2008; Magnusson, Krajcik, & Borko, 1999; Mishra & Koehler, 2006). Nevertheless, several commonalities exist across the various conceptualizations of PCK that remain true to Shulman's original thinking (Van Driel, Verloop, & DeVos, 1998). One commonality is the notion that PCK defines the teacher knowledge needed to transform and represent content knowledge in a way that accounts for diverse student learning needs. Also rarely disputed are the ideas that PCK is subject-specific, differs from content knowledge, and develops interactively with instructional practices.

Therefore, PCK as a theoretical framework has heuristic value for conceptualizing the types of teacher knowledge needed for effective instructional practices (Ball et al., 2008; Mishra & Koehler, 2006). More specifically, PCK frameworks are useful in developing a nuanced understanding of the types of teacher knowledge needed to deliver effective instruction in a way that is true to the situated and context-dependent nature of

teacher knowledge (Mishra & Koehler, 2006). Further, the goal of teacher education is to develop instructional reasoning skills and practices, which requires an intimate and detailed understanding of the teacher knowledge base as it informs instruction (Shulman, 1987). Research on teaching that ignores the complexities of classroom contexts and only advocates for generic instructional practices across all subject areas runs the risk of promoting ineffective teaching and learning environments (Shulman, 1987). Consequently, PCK framework scholarship has been widely published since Shulman's PCK inception in the late 1980s, mainly in science and mathematic education (Ball et al., 2008). However, most studies have focused on how one component of the PCK framework is related to another component (e.g., Veal & Kubasko, 2003) and how one component of the PCK framework impacts PCK and instructional practices in their entirety (e.g., Kamen, 1996).

Shulman's original ideas about PCK as a construct were also further elaborated upon by Ball et al. (2008) by dividing PCK into three domains: *knowledge of content and curriculum*, *knowledge of content and teaching*, and *knowledge of content and students*. Ball and her colleagues were unsure of how to define knowledge of content and curriculum, which was inconsequential to this study since the investigative focus was on knowledge of content and teaching and knowledge of content and students. Knowledge of content and teaching, as it relates to economics, refers to the combination of teachers' knowledge of economics and knowledge of teaching that allows them to "evaluate the instructional advantages and disadvantages of representations used to teach a specific idea and identify what different methods and procedures afford instructionally" (p. 401).

Knowledge of content and students in economics, then, refers to the amalgamation of teachers' knowledge of economics and knowledge of students that enables them to unpack economic content in a way that students will understand based on prior knowledge as well as to choose economic content examples that students will find interesting based on their life experiences. Increasingly diverse student populations require teachers with more than just content knowledge (Park & Chen, 2012). Such students need teachers with pedagogical knowledge that revolves around the uniqueness of each student's strengths and challenges as well as the sociocultural influences on learning, the benefits of collaborative learning, and in-school versus out-of-school funds of knowledge (Moje et al., 2004; Vygotsky, 1978; Wilkinson & Son, 2011). Effective teachers understand what makes topics easy or difficult for students to learn based on each student's unique life experiences and prior knowledge then formulate instructional strategies accordingly (Shulman, 1986). Shulman (1987) labeled this type of teacher knowledge as "knowledge of learners and their characteristics" (p. 8).

Knowledge of content and students also includes a clear understanding of how and why students struggle to comprehend certain subject-specific concepts and skills. Of particular interest and heightened research efforts are student misconceptions of subject-specific content (Ball et al., 2008; Shulman, 1986). For example, researchers have found that student misconceptions of what kinds of knowledge count in history education can prevent disciplinary understanding in history (Wineburg, 1990), and student misconceptions of *opportunity cost* can lead to uniformed decision making in economics (Schug & Baumann, 1991). Similarly, if the economic misconceptions often held by

elementary school students are not corrected, these misconceptions potentially serve as learning barriers in the future, preventing high school students from learning new economic concepts correctly (Baumann, 1996-1997; Schug & Walstad, 1991).

Therefore, effective economic teachers not only understand and recognize students' confusion of specific economic concepts, but they also are adept at designing and delivering economic lessons and explanations that clear up students' misunderstandings and thus appropriately prepare students for new learning (Baumann, 1996-1997; Schug & Baumann, 1991; Schug & Walstad, 1991; Shulman, 1987). For example, Schug and Baumann (1991) conducted structured interviews with exemplary high school economic teachers who were nominated by their local Center for Economic Education directors during which teachers described their knowledge of content and students in terms of students' common misconceptions of specific economic concepts (e.g., *demand*, *supply*, and *money creation*) as well as necessary related instructional practices particularly effective in remedying these misrepresentations.

Baumann (1996-1997) conducted a similar study but this time Ph.D. economists and high school students without any direct economic instruction were interviewed to determine respondents' ability levels in economic reasoning by applying economic concepts in ways that evaluated or solved nine economic problem scenarios. Gaining insight into the ways in which students correctly and incorrectly apply economic concepts is an important component of teacher content knowledge. Besides lacking a deep understanding of economic concepts as compared to the economists, students also demonstrated misconceptions of economic concepts (e.g., *profits*, *inflation*, and *fiscal*

policy) and an inability to draw sound conclusions based on the economic problems presented using economic concepts and theoretical arguments.

Baumann categorized the study's findings into three common types of economic misconceptions that clearly distinguished the students from the economists. First, students' understandings of economic concepts were not necessarily incorrect but rather lacked a depth of content knowledge needed to accurately assess and solve the economic problems presented. Second, students used outdated economic information such as the belief that currency is still backed by gold, which prevented them from accurately understanding other economic concepts such as *inflation*. Third, students often approached the economic problems from only a consumer perspective based on the fact that most of their experiences in the economy were not from a producer perspective, which resulted in a limited and skewed understanding of the economic problems. These types of economic misconceptions held by students are necessary for teachers to recognize and proactively address to better facilitate student learning.

Also new to former PCK conceptualizations is an emphasis on the interactive nature of the PCK framework components. For example, there is a need to understand the bidirectional interaction between content knowledge and PCK by learning about, for example, what teaching a subject tells us about what counts as important content knowledge (Kinach, 2002). An interactive perspective is advanced by the transformative PCK model created by Magnusson, Krajcik, and Borko (1999) in science education, which includes the following five interactive components: orientation to teaching; knowledge of curricula; knowledge of assessment; knowledge of students'

understanding; and, knowledge of instructional strategies. An added emphasis is also placed on the relationship between assessment and PCK and the delineation of teacher knowledge of subject-specific instructional practices into topic-specific activities, such as learning about photosynthesis, and subject-specific strategies, such as inquiry learning in science. Park & Chen's (2012) study used Magnusson et al.'s (1999) PCK model to examine the interactions between the five components and found that PCK development is in fact highly dependent on the interaction of the components. Moreover, increasing teacher knowledge in one component does not consistently advance PCK or instructional practices as a whole while PCK components that are misaligned may negatively impact PCK.

Similar to Magnusson et al.'s PCK model, Park & Oliver (2008) developed what they called the *Pentagon Model* which also views PCK not as a separate type of knowledge per se but rather interacts equally with all other types of teacher knowledge. The interactive nature of the PCK framework is also emphasized when describing effective technology integration practices informed by Mishra and Koehler's (2006) Technological Pedagogical Content Knowledge (TPCK) framework which adds a technological knowledge domain and requires teacher knowledge that extends beyond each separate domain to include interactions between them.

Many of these new PCK conceptualizations and frameworks have been the focus of empirical studies attempting to understand the impact of teacher PCK on student achievement. When early studies in mathematic education measured teacher content knowledge using coursework and test scores, a weak link existed between teacher

knowledge and student achievement (Romberg & Carpenter, 1986). Shortly thereafter, new ways of conceptualizing teacher content knowledge ensued and was redefined as teacher knowledge of student thinking in various subject areas, which later became an important component in PCK and professional development models for mathematic knowledge for teaching (Carpenter, Fennema, Peterson, & Carey, 1988). A study by Hill, Rowan, and Ball (2005) empirically suggests that this new conception of what most reliantly leads to student learning—that is, mathematic knowledge for teaching—predicted significant gains in student achievement. This work collectively lead to what Ball et al. (2008) termed "a practice-based theory of mathematical knowledge for teaching" (p. 395).

Other PCK and student achievement research findings suggested teacher PCK improves student achievement across all ability levels and content knowledge was less of a predictor of student achievement than PCK (Baumert et al., 2010). However, teachers with more content knowledge also had more PCK (Krauss et al., 2008) which echoes Shulman's (1987) original theory that content knowledge alone does not necessarily lead to effective instructional practices. Finally, several other PCK key research findings include the influential role of assessments in determining effective PCK as measured by student achievement, the need to capture detailed accounts of "PCK in action" during classroom instruction, and the use of PCK frameworks to determine shortcomings in teacher knowledge (Hanuscin, Lee, & Akerson, 2010).

In terms of teacher development of PCK, several influential studies on beginning and preservice teachers have been conducted. In general, beginning teachers who

complete teacher education courses tend to have higher levels of PCK than teachers who do not, regardless of high levels of content knowledge; teachers without teacher education coursework consequently develop PCK through trial and error (Grossman, 1990). Further, preservice teachers who complete the same teacher education programs develop different levels of PCK including its various framework components (De Jong, Van Driel, & Verloop, 2005). PCK development in preservice teachers also results from reflecting on personal instructional practices (Nilsson, 2008) as well as the instructional practices of expert teachers, using the construct of PCK as a guide to teacher knowledge about instructional practices (Loughran, Mulhall, & Berry, 2008). However, a common PCK obstacle for preservice teachers is learning to move beyond one's own understanding of how to solve a problem to explaining how to solve a problem to students (Geddis and Wood, 1997; Kinach, 2002).

PCK Research in Social Studies

Fewer PCK studies exist in social studies than mathematics and science, yet these studies also typically focus on the impact of one PCK component on another component or on the PCK framework as a whole. History is the social studies subject that has received the most attention within the PCK social studies literature. Content knowledge for history instruction requires that teachers not only understand historical facts and events but also the nature of history knowledge and how it is generated through interpretation and evidenced-based thinking—that is, historical thinking skills (Wineburg, 1999). This type of syntactic structured content knowledge in history coupled with PCK is needed for teachers to authentically instruct students on how to think like a historian

(Seixas, 1998; Wilson & McDiarmid, 1996; Wilson & Wineburg, 1988; Yeager & Davis, 1995). In fact, most preservice PCK studies focus on developing historical thinking skills in teacher candidates (Journell, 2013) who graduate from the same teacher education program with different strengths and challenges related to content knowledge, knowledge of students, and pedagogical knowledge (Monte-Sano, 2011). Such instruction is also necessary in reversing student misconceptions and misguided disciplinary understandings of history, which equates history learning with simply memorizing dates and events.

Teacher understanding of student disciplinary thinking in history, categorized as knowledge of content and students using Ball et al.'s (2008) domains, is an important component of PCK (Monte-Sano, 2011). However, such studies are limited in history despite finding direct connections to student learning in other disciplines (Atkin & Coffey, 2003; Ball, 1993; Franke et al., 2009; Hammer, 1997) and the role students' prior knowledge plays in developing effective instructional practices in history (Bain, 2005). Several studies of preservice teachers do examine, however, the positive impact on PCK development when preservice teachers investigate what their students understand about history prior to instruction (Barton, McCully, & Marks, 2004; Seixas, 1994).

Gaining insight into students' prior disciplinary understanding should serve as the basis for how teachers transform history content knowledge into accessible knowledge forms for students (Bain, 2005; Wineburg & Wilson, 1988). These history knowledge transformations should convert how students think about history into how historians think about history (Monte-Sano, 2011; Wineburg, 1999). However, both at the primary and secondary levels, the greatest determinant of how history actually gets taught is the

teacher's instructional goals (Barton & Levstik, 2014; Grant, 2003; Van Hover & Yeager, 2007), findings consistent with studies at the preservice level (Adler, 1984; Ross, 1987). Also highly influential on instructional practices are teachers' general orientations developed by personal life experiences and academic backgrounds. For example, a social studies teacher who majored in political science or economics may teach history differently than a social studies teacher who majored in history (Wilson & Wineburg, 1988).

Fewer PCK studies have been conducted in civics education beyond the documentation that elementary, middle, and high school teachers lack sufficient content knowledge of politics and current events and the acknowledgement that PCK is required for productive classroom discussions about civic issues (Doppen et al., 2011; Journell, 2013). Even further limited are PCK studies in economics, which currently only includes one recent study that used TPCK, an extension of the PCK framework, to examine economic instruction that integrated podcasting technology (Swan & Hofer, 2011). Therefore, the purpose of this study was to gain an in-depth understanding of the personal orientations and PCK held and demonstrated by three award-winning secondary economic teachers.

Using a PCK framework to investigate economic instruction at the secondary level provides concepts and theories that will assist in identifying patterns in the complex and dynamic workings of classrooms, facilitating meaningful interpretations and descriptions of what is going on from both the researcher and participants' perspectives (Merriam, 1998). This "wisdom of practice" study (Shulman, 1987; Wineburg & Wilson,

1988) will provide an in-depth understanding of what economic teachers need to know, think, and do to deliver quality economic instruction at the secondary level. These findings will assist educational stakeholders in developing teacher education programs, curriculum, standards, and recommended teaching practices that will ensure secondary students understand economics in a way that has lasting and empowering effects into adult citizenship. A PCK framework also ensures the conceptual integrity (Schram, 2006) and significance of this study's inquiry process and findings by connecting them to a PCK literature base and to what we already know about teaching and learning economics at the secondary level.

Research on Secondary Economic Instruction

State and National Economic Standards

Many state standards and economic teachers often rely on the 20 *Voluntary National Content Standards in Economics* (CEE, 2010), or the *Standards*, as the basis of their instruction. Each of these 20 standards includes explicit connections between the economic content and related knowledge and skills students need for productive citizenship. The importance of the *Standards* should be underscored because of the important role they play in what high school students learn about economics. Highly influential, the *Standards* are often the basis of state standards, textbooks, other curricular resources (Lopus & Leet, 2003; Miller & VanFossen, 2008), and national assessments such as the NAEP high school exam in economics (Miller & VanFossen, 2008). Economic instructional practices should also strive to accomplish the national social studies curriculum goals set forth by the NCSS (2010) which includes the "*integrated*

[emphasis added] study of the social sciences and humanities to promote civic competence" (p. 3) and by the new College, Career, and Civic Life (C3) Framework (NCSS, 2013) that insists on inquiry-based learning across all social studies subjects with an interdisciplinary focus. The recent adoption of the Common Core State Standards by most states suggests that teachers who possess adequate curricular knowledge find ways to deliver multidisciplinary instruction as well.

Secondary Economic Teachers' Content Knowledge

Intuitively and based on research evidence, we know that teachers who have more economic knowledge consistently have students who learn more economics (Bosshardt & Watts, 1990, 2005; Miller & VanFossen, 2008; Watts & Walstad, 2005, 2011). This correlation has been found in a number of studies that revealed national samples of high school students achieved reliably higher standardized test scores when their teachers had completed more coursework in economics (e.g., Allgood & Walstad, 1999; Walstad, 1992). In fact, Lynch (1990) concluded that teachers need at least four economic courses to significantly impact student achievement in economics, while Allgood and Walstad (1999) suggested that a minimum of six economic courses were necessary for the greatest increase in student achievement.

As early as 1985, the CEE has called for increased formal preparation of economic teachers, including specific requests that social studies teachers complete a minimum of three economic courses as well as complete teaching methods courses and clinical experiences that include economic content (Schug & Walstad, 1991). However, the National Council for the Accreditation of Teacher Education (NCATE), taking its

lead from the National Council for the Social Studies (NCSS), does not require a minimum number of courses in any social studies discipline for teachers seeking general social studies licensure other than a concentration of six courses in one discipline and content courses adding up to at least 40% of a four-year teacher preparation program (Miller & VanFossen, 2008). These nonspecific licensure requirements are problematic because few teachers voluntarily select economics as their area of concentration or even as multiple elective courses. Case in point, Aske (2003) examined the transcripts of teacher education students who graduated from a university in Colorado between 1994 and 1999 and found that prospective teachers took fewer courses in economics than in any other social studies subject.

Little effort has been exerted to increase the economic requirements for formal teacher preparation programs in social studies education (Schug, Harrison, & Clark, 2012). This unprepared status of economic teachers has been documented for many years. For example, dating back to 1985, a survey was administered to secondary social studies teachers in 15 states, revealing that 10-20% of the teachers completed no economic courses, 25% of the teachers completed one course, and 30% of the teachers completed two courses (Schug & Walstad, 1991). Similarly, Lynch (1994) found that almost 70% of social studies teachers whose students participated in the norming of the second Test of Economic Literacy (TEL) had completed two or fewer economic courses.

Also reporting on the limited preparation of social studies teachers was Eisenhauer & Zaporowski (1994), who analyzed the data one step further by comparing the economic coursework between social studies teachers who taught a variety of social

studies subjects, including economics, and social studies teachers who only taught economics and who had majored in economics in either an undergraduate or graduate program. This comparative analysis between "cross-disciplinary" (i.e., interdisciplinary) social studies teachers and strictly economic teachers included a total of 178 teachers in 114 high schools in the western region of New York. Survey findings revealed that cross-disciplinary social studies teachers self-reported taking, on average, five times fewer economic courses than their economic teacher counterparts—specifically 2.49 courses compared to 12.3 courses. Further, 13% of all the teachers surveyed never took a single economic course. The reality of teacher unpreparedness became even clearer when the researchers discovered that 86% of economic courses were taught by cross-disciplinary social studies teachers, who only taught economics as a small part of their overall teaching responsibilities. Moreover, cross-disciplinary social studies teachers indicated that they had difficulty teaching 42% of the economic content outlined in the course syllabus, thus struggling to get students to comprehend the economic content. Three-fourths of these same teachers specified the need for in-service professional development programs in economic content and pedagogy.

The shortage of teachers properly prepared to teach economics was also verified by Dumas, Evans, and Weible (1997) when they documented that the mean number of courses completed by teachers who taught economics in 27 states was slightly more than one course—that is, 3.9 semester hours. However, another study of economic teachers in Colorado reported that five or more economic courses were taken by 52% of the strictly economic teachers and 48% of the government/economic teachers. Two or fewer courses

were only taken by 11% of all teachers. Moreover, additional coursework and professional development in economics were completed by many of the teachers after they graduated from their teacher education programs.

While the impact of teacher knowledge of economics has been directly correlated with student learning of economics, far less is known about the impact of teacher economic attitudes on student learning. In one of only a few studies, Marlin (1991) found that student achievement in economics was measurably less in economic courses that were mandated by the state, in part because teachers of state-mandated courses held negative attitudes toward teaching economics.

Although not directly related to student achievement in economics, Vredeveld and Joeng (1990) analyzed the impact of teachers and students disagreeing on the goals of an economic course. The researchers asked both teachers and students to rank the following three possible goals of an economic course, verbatim (p. 319):

- To better understand the American economy
- To better understand current economic problems such as inflation and unemployment
- To learn practical skills needed in daily life, such as balancing a checkbook, filling out tax forms, using credit cards, shopping wisely, and so on.

The vast majority of teachers (i.e., 86%) believed the most important goal was to teach students about the American economy while only 39% of the students believed this was the most important goal. On the other hand, 54% of the students ranked the learning of practical skills as the most important of the three goals. Consistent with Clark and Davis'

(1992) conclusions, Vredeveld and Joeng found that students self-reported liking economics less after taking an economic course that did not emphasize practical skills as well as being less likely to take another economic course in the future.

Many economists and economic educators agree in part with the students in Vredeveld and Joeng's (1990) study in that the goal of an economic course should be to teach students economic concepts primarily to facilitate better personal and societal decision making—that is, economic courses should focus on the "method" or practical side of economics, as do professional economists (Buckles, 1987). However, when economists and economic educators speak of practical skills, they most often are referring to the study of economics and not personal finance (VanFossen, 2000)—a related, yet distinctly different subject. Despite this common agreement on the goal of economic education, a study by Schug, Dieterle, and Clark (2009) found, to their surprise, that over 1,000 teachers interviewed regarded personal finance skills as more important than economic skills.

Nevertheless, teacher goals focused on economic skills, as opposed to personal finance skills, have been found to be prevalent in other studies. For example, Highsmith (1990) determined that 90.2% of the teachers ranked "to prepare students to make intelligent decisions as workers, consumers, and voters" as very important when teaching economics. In contrast, only 44.7% of the teachers ranked "to teach students practical skills that they need in their daily lives, such as balancing a checkbook, filing out tax forms, using credit cards, how to shop wisely, etc." as very important when teaching economics. Interestingly, though, the findings from a study by VanFossen (2000) are

split between the two camps—that is, economic versus personal finance skills. Teachers interviewed described their rationales for teaching economics as equipping students with both democratic citizenship skills, grounded in economic understanding, as well as more basic life skills, grounded more in personal financial understanding.

Economic Reasoning

Both implicitly and explicitly, much of the literature in economic education insists that the high school economic course move beyond just teaching students a collection of economic concepts and principles. Rather, many economic educators and researchers suggest that the primary goal of economic education should be to teach students economic reasoning skills—that is, to teach students to "think like an economist" (Schug & Western, 1990; Siegfried et al., 1991; Wentworth, 1987). Related studies have been conducted in the area of expert-novice reasoning. VanSickle (1992), for example, found that economists not only have greater economic content knowledge (i.e., *declarative knowledge*) than high school students but also knew when and how to apply that knowledge more effectively (i.e., *procedural knowledge*). Together, the extent to which these two types of economic knowledge, collectively called *schematic knowledge*, was used by economists was what accounted for the difference between expert versus novice economic reasoning. Also contributing to the expert-novice literature base in economic education are two studies by Miller and VanFossen (1994) and VanFossen (1995), the latter of which is a replication study of the first. In both studies, a "think aloud" process was used to make explicit the way economists went about solving economic problems as compared to their novice counterparts, high school students. Overall findings once again

suggested that expert economists applied far greater procedural knowledge than did novice high school students.

The intent behind teaching students to think like an economist is to ultimately empower students with the economic reasoning skills needed to make more rational and productive decisions for themselves and society at large, thereby more successfully fulfilling their roles as democratic citizens (Buckles, 1987). Economic reasoning requires inductive and deductive reasoning skills used in conjunction with economic concepts and theories in a way that leads to a better understanding of economic phenomena or a solution or conclusion to an economic problem (Baumann, 1996-1997). Wentworth and Schug (1993) argue that emphasizing economic reasoning skills also reaps multiple benefits in the social studies curriculum such as teaching economic content without overburdening students with terminology and more clearly making the case for economic education in U.S. schools.

Domain-specific reasoning skills are not new to social studies education. History education, for example, promotes the use of "historical thinking" to move history students beyond memorizing static historical facts and dates to a skill set that enables them to analyze and compare historical primary documents and decide for themselves, based on the evidence corroborated, what might have actually happened in the past (Wineburg, 1999). To apply a generic method of reasoning to the various social studies subjects is to contradict much of what the domain-specific education literature concludes. Armento (1987) claims that the professionals in most disciplines utilize unique reasoning and problem solving skills, and Byrnes (1995) states that these domain-specific strategies

are much more important than any transferable domain-general strategies. Based on a review of domain-specific and expert-versus-novice research, Watts (2005) concludes that economics is in fact a domain-specific subject, thus applying knowledge and skills from other subjects is challenging. Like teaching historical reasoning skills, teaching economic reasoning to students is not only unnatural but also does not automatically evolve as students learn economic concepts and principles (Wineburg, 1999; Wentworth, 1987). Instead, economic teachers must intentionally create inquiry-based activities, preferably inquiring about real-world economic problems, and then teach students to use economic principles to gain an in-depth understanding of the problem and hypothesize about solutions to the problem—economic reasoning skills students will likely use as adult citizens (Wentworth & Western, 1990).

Students engage in economic reasoning by using a host of concepts, theories, and models unique to the study of economics including supply and demand graphs, production possibilities frontier graphs, the circular flow model, cost-benefit and marginal analyses, decision making models, and the economic way of thinking. The *economic way of thinking* (EWT) is common terminology among many economic educators and curricular publications as well as a process commonly used by academic and professional economists (CEE, 2000). In general, the EWT is based on a set of economic assumptions and principles and is designed to assist students in making sense of personal, commonplace experiences as well as societal, complex issues (Wentworth & Western, 1990). In other words, the EWT is an intellectual viewpoint that facilitates

understanding the world through an economic lens (Schug & Western, 1990) when common sense and generic reasoning skills are insufficient (Ennis, 1989).

Several prominent economic educators and researchers offer specific, overlapping explanations of what makes the EWT unique and powerful in understanding the world in which we live. For example, Wentworth and Western (1990) point out that the economic assumptions, on which the EWT is based, stand the tests of time and location because they are relevant to not only events that happened hundreds of years ago but also that happened in distant parts of the world. That is, all cultures engage in, albeit to varying degrees and in different ways, basic economic experiences such as making decisions, responding to incentives, and trading. Also highlighted by Wentworth and Western is the idea that the EWT provides a baseline of assumptions that serves as a starting point when personal and societal problems present an overwhelming amount of useful as well as useless evidence, further compounding the often mysterious nature of human experiences.

Along the same lines, Lopus, Morton, and Willis (2003) suggest that economics is a social science that attempts to make sense out of human behavior—not merely a collection of concepts and principles. As such, economics requires a particular way of thinking in order to analyze decisions made in the past and rationally make decisions in the present and future in the midst of complex and chaotic personal, cultural, and values-based influences. The fundamental premise for promoting the EWT as a core goal of high school economic courses is succinctly and famously captured in a quote by John Maynard Keynes (1922), a prominent economist in the first half of the 20th century,

whose work became known as *Keynesian economics*, which is still a catalyst of national macroeconomic debates today:

> The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions. (para. 1)

Lopus et al. (2003) echo Keynes' sentiments regarding the discipline of economics by associating effective activity-based economic instruction with the teacher's skill in stimulating student minds in the process of using economic reasoning to make decisions and provide solutions to personal and societal problems.

Wentworth (1987) further clarifies what it means to engage in the EWT by describing it as a paradigm predicated on two essential characteristics. The first characteristic of the EWT is that it is firmly rooted in basic assumptions about human behavior confirmed in large part by scientific evidence. The second characteristic of the EWT is that it operationalizes deductive reasoning by using these basic assumptions to understand human behaviors which run counter to what ordinary experience and thinking initially suggest. These basic economic assumptions that commonly appear in economic education curricular materials are described by six tried-and-true economic principles upon which most economists agree and include the following (CEE, 2000; Wentworth & Schug, 1993; Wentworth, 1987):

1. People choose.

   People evaluate the costs and benefits of different alternatives and choose the alternative in which the benefits outweigh the costs.

2. All choices involve costs.

   The opportunity cost of any decision is the second best alternative not chosen.

3. People respond to incentives in predictable ways.

   Incentives can be positive or negative and influence people's behaviors in predictable ways.

4. Economic systems influence individual choices and incentives.

   How people behave is governed in part by written and unwritten rules of three major types of economic systems: command, market, and traditional. As rules change, incentives and behaviors change.

5. Voluntary trade creates wealth.

   Whenever people choose to engage in voluntary exchange, they are better off.

6. The consequences of choices lie in the future.

   The important costs and benefits in economic decision making are those that appear in the future and include both intended and unintended consequences.

These six economic assumptions and principles construct a unique lens by which to understand, analyze, and make sense of the world. The essence of this particular approach to economic reasoning is embedded in basic cost-benefit analysis conventions which weigh the costs of a particular decision—often measured in nonmonetary units

such as time and space—against the benefits, with particular attention paid to the additional or "marginal" costs and benefits incurred.

The instructional advantages to incorporating economic reasoning, specifically the EWT, throughout a high school economic course is threefold. First, using economic concepts and principles to investigate real-world issues, on both personal and societal levels, often increases student interest in learning economic content (Wentworth & Western, 1990). Second, students need not learn complex economic content to engage in solving everyday problems and mysteries related to human behavior, which typically hold the students' attention in and of themselves (Wentworth, 1987). Third, allowing students to generate their own economic theories of human behavior by utilizing the EWT also creates fertile ground for introducing more complicated economic concepts and principles down the road, all in the name of "doing" economics the way economists do (Rosales & Journell, 2012).

The EWT, or rather the type of reasoning economists use to analyze, explain, and predict human behavior, can be taught to students in upper elementary grades through high school grades (Wentworth, 1987). Schug and Walstad (1991) and Miller and VanFossen (2008) have called for economic education researchers to compare the effectiveness and efficiency of using instructional practices focused on economic concepts versus economic reasoning skills, such as the EWT; however, no formal comparative research studies have been implemented to date. Furthermore, it appears that high school social studies teachers are almost evenly split on what the goal of economic instruction should be—learning economic concepts or learning how to apply

economic reasoning skills. Schug, Dieterle, and Clark (2009) analyzed telephone interview data collected by the Center for Survey Research and Analysis using a national sample of 1,201 high school social studies teachers, consisting of 300 U.S. history teachers, 300 world history teachers, 301 civics/government teachers, and 300 economic teachers. In response to an interview question asking teachers what they thought was the most important reason to include economics in the curriculum, 28% of the teachers ranked "forming critically-minded, reflective citizens" as the most important reason, while 24% of the teachers ranked "developing an understanding of basic economic concepts" as the most important reason.

Perhaps also only loosely related in terms of the degree to which the EWT is intentionally being taught in high school economic classrooms are the findings of a study conducted Becker, Walstad, and Watts (1994). These researchers found that while secondary economic teachers responded more like economists regarding current economic problems than other secondary social studies teachers, these economic teachers were more aligned with journalists rather than economists when their responses were further analyzed. Conversely, after completing a three-year master's degree program in economics, economic teachers were indeed found to align more with economists than journalists when they responded to a series of economic issues (Allgood & Walstad, 1999).

A form of procedural knowledge, the EWT was the basis of a quasi-experimental research study conducted by Susskind (1997). Using a sample of 22 U.S. history classes, half of the classes served as the treatment group and received a minimum of two

economic lessons over a four-week timeframe specifically focused on teaching students to use the EWT to gain a better understanding of historical events. The other 11 schools, serving as the comparison group, received instruction on the same U.S. history content that was devoid of the EWT. As was expected, the treatment group gained greater expertise in using the EWT to solve economic "mysteries" in U.S. history as a consequence of receiving deliberate instruction and practice opportunities on this approach to economic reasoning. However, no statistically significant differences existed in the pre/post-test scores nor did the researchers control for most student, teacher, or school variables.

In addition to the EWT, another tool involving economic reasoning that has gained traction in high school economic courses is the decision making model, or the "economic method" as Buckles (1987) labels it. Anchored in cost-benefit analysis and derived from the scientific method, Buckles suggests that the economic method is requisite for students to make beneficial personal and societal decisions. Specifically, this economic method utilizes economic reasoning in a five-step decision making model, commonly referred to as PACED. This acronym identifies each of the five steps, as explained by Buckles:

1. Define the Problem.
2. Specify the policy options or possible decision Alternatives.
3. State the Criteria or goals the alternatives should meet.

4. Analyze the consequences of each of the policy options or decisions, using relevant economic concepts, and Evaluate each of the options according to the criteria or goals.
5. Decide which of the alternatives is best in light of the evaluations and the relative importance of the different criteria or goals.

This five-step decision making model not only helps students reason through simple and complex economic problems but is also highly adaptive and conducive to solving problems in other disciplines (Buckles, 1987).

Laney (1991) investigated a variation of Buckles' five-step method to economic reasoning by asking students to use a cost-benefit analysis approach to making either a hypothetical personal decision about time allocation or a non-hypothetical personal decision. Specifically, Laney was interested in understanding the extent to which high school seniors used economic reasoning in the form of cost-benefit analysis when deciding what to do with 30 minutes of free time. Half of the students were actually allowed to use the 30 minutes of free time as they chose, comprising the non-hypothetical group, and the other half of students were only to imagine what they would decide to do with 30 minutes of free time if they had it, thus comprising the hypothetical group. While not overly descriptive, the findings suggested that both groups of students employed about the same level of economic reasoning in terms of applying basic cost-benefit analysis concepts and skills, regardless of whether they were in the hypothetical or non-hypothetical group. These findings have implications for using personal and societal dilemmas that students may or may not have already experienced as instructive

problem scenarios to which cost-benefit analysis skills are applied to better understand the world around them and to make better decisions in the future if similar dilemmas arise.

Morton (1987) measured the effectiveness of a four-step instructional process used by one high school's economic teachers designed to progressively incorporate higher levels of economic reasoning by simply using a variety of basic economic concepts and principles to solve problems and make decisions. The first step in the four-step instructional process required teaching the meaning of basic economic concepts and principles. Step two of the process involved reinforcing these basic economic concepts and principles by applying them to various economic problems in an effort to find both personal and societal solutions. Step three required students to reason through a variety of noneconomic problems utilizing the same basic economic concepts and principles such as *trade-offs* and *opportunity costs*. Lastly, teachers provided problem-solving activities that required students to apply the economic knowledge and skills they had learned and practiced to hypothetical scenarios they would encounter as consumers, workers, and citizens. Based on pre/post-test TEL scores, students in all three ability-level groupings—low, average, and high—achieved significant gains, with low and middle-ability students improving their post-test scores by approximately 90%, suggesting all high school students have the potential to learn economic reasoning skills.

However, Wentworth (1987) reminds economic educators that a curriculum emphasizing economic reasoning will most often generate better instruction and increased student interest if teachers adhere to three important guidelines. First, teaching

economic concepts and principles does not automatically result in students learning how to utilize economic reasoning. Second, students do not need to learn a vast amount of economic content before they can effectively use the assumptions and processes involved in various approaches to economic reasoning. Third, and consequently, student achievement in economics will be higher if instructional practices are defined by teaching a mix of economic content and economic reasoning, with priority given to the latter.

Research on Secondary Economic Instructional Practices

Economics is the dismal science to some people. This clichéd expression has characterized economics as a discipline for many years, as has the opinion held by many students that learning economics is the equivalent of memorizing definitions and robotically drawing complicated graphs. That is, students often view economics as a subject that has no practical application to their daily lives (Armento, 1987). In some regards, these student opinions are true. According to Wentworth (1987), economic learning has traditionally been mostly passive. More specifically, economic instructional practices have revolved around students memorizing facts, models, and policy alternatives in the process of being bombarded with vast amounts of economic content void of basic economic reasoning skills necessary in analyzing novel economic situations. In the same way, Buckles (1987) lists examples of what economic instruction should *not* entail: focusing mainly on personal finance skills such as writing checks; committing to memory fluid facts and diagrams; and, categorizing resources into land, labor, and capital classifications. These passive learning activities, Buckles argues, do not qualify as economic education because students do not apply economic concepts in a

way that facilitates economic reasoning used to reach intelligent judgments and make informed decisions about personal and societal issues.

Compounding the problem of passive economic instruction is the extremely limited number of studies that have been conducted in hopes of determining which economic instructional practices generate the greatest gains in student achievement in economics (Miller & VanFossen, 2008; Schug & Walstad, 1991). Consistent with Becker, Greene, and Rosen's (1990) findings after reviewing precollege economic education research over 20 years ago is the present conclusion that no particular instructional practice has been found to be relatively more effective in improving student economic understanding (Watts & Walstad, 2011). In fact, no instructional practice has even been found to be consistently more effective than traditional "chalk and talk" practices commonly used by teachers to facilitate traditional economic lectures (Watts & Walstad, 2011). Therefore, despite anecdotal and empirical evidence that active learning improves student performance in other education literature (e.g., Newman et al., 2012 and Newmann, Marks, & Gamoran, 1995), Watts and Walstad (2011) projected that few incentives exist for economic teachers to change their passive instructional strategies since the negative effects on students typically only influence the degree to which students find economics interesting and relevant and not student achievement in economics. However, Robinson and Davies (1999) still recommend limiting "chalk and talk" instruction to less than 25% of class time.

However, compared to other social studies teachers, economic teachers self-reported using fewer passive learning activities in a telephone interview study conducted

by Schug, Dieterle, and Clark (2009). Of the 1,201 teachers surveyed, 70% of the economic teachers said they used whole class presentations in nearly every class as opposed to 77% of the civics teachers and 78% of the history teachers. Economic teachers also reported using more small group, problem-solving, and Internet-based learning activities than their social studies colleagues. Clark, Schug, and Harrison (2009) offer two potential justifications for these somewhat surprising findings that suggest economic teachers are more activity-oriented than their counterparts. First, a large influx of student-centered, active learning instructional resources—for example, simulations, role-plays, and demonstrations—have been published by the CEE and other economic education organizations in the last two decades, of which many teachers have taken advantage. Second, based on the notion that most economic educators agree on the fundamental economic concepts and principles students should learn, perhaps economic teachers are more likely to use these newly published active learning instructional materials that also align with the widespread agreement on economic content and learning standards.

Irrespective of the fact that no single instructional practice has been found to consistently improve student achievement in economics, there have been, nevertheless, several studies aimed at documenting the effectiveness of various economic instructional practices. Vredeveld and Jeong (1990) concluded that students most enjoyed their economic course when teachers not only taught economic concepts and principles but also applied them in a practical way, allowing students to relate economic content to their daily lives. In other words, teaching economic content in a way that translates into the

knowledge and skills students need in their everyday lives is a hallmark of effective instructional practices in economics (Rosales & Journell, 2012; NCSS, 2010).

In a related study conducted in Amsterdam, Kneppers, Elshout-Mohr, Van Boxtel, and Van Hout-Wolters (2007) compared the impact of concept-based instructional practices with context-based instructional practices on student learning in two high school economic courses. The goal of the concept-based instruction was to thoroughly explain economic concepts and highlight the relationships that existed between the concepts. Contrarily, the goal of the context-based instruction was to emphasize the relationships that existed between economic concepts and the practical contexts in which they existed. The impetus for this study was based on the educational expectations that students should be able to use an economic perspective to critically analyze everyday issues as well as be able to transfer these economic analysis skills to new contexts. As expected, students taught by context-based instruction were more likely to transfer their economic knowledge and skills to unfamiliar contexts than were students taught by concept-based instruction. However, no significant difference was found between the two instructional treatments when comparing the scores on a test measuring economic concept understanding. Furthermore, the findings were inconclusive regarding whether or not students needed a strong conceptual framework for transferring economic knowledge and skills to novel situations.

Similar to context-based instruction, although a genre of its own, is problem-based instruction that helps students understand the importance of economic content in solving problems they and others face on a regular basis (Baumann, 1996-1997). This

approach to economic instruction not only demonstrates the everyday relevance of economics, but also potentially assists students in understanding economic concepts more deeply and in a way that transfers to new real-world problem scenarios which social studies education as whole is uniquely positioned to solve (Anderson, 1982; Baumann, 1996-1997). In 2002, two separate studies with different results were conducted to understand the impact of problem-based instructional practices on student achievement and attitudes in economics, both generating mixed findings. Mergendoller, Bellisimo, and Maxwell (2000) found that, when comparing problem-based instructional practices to more traditional, passive instructional practices, there were no differences found between the two groups of students in terms of specific learning outcomes related to individual economic instructional units; however, greater gains in pre/post-test scores calculated at the beginning and end of the semester were found for students who received the more traditional instruction. A similar study was directed by Son and VanSickle (2000) in which half of the teachers used problem-based instructional practices and the other half used expository-based instructional practices. The findings revealed that there were no significant variances in how students organized related economic concepts in their minds, but the students who were taught by problem-based instruction acquired significantly more economic content and were able to retain it longer.

Schug and Baumann (1991) investigated instructional practices used by experienced economic teachers, also nominated as being "expert" economic teachers, in correcting economic misconceptions held by students. A list of commonly misunderstood economic concepts along with commonly used "best" practices in

correcting misconceptions was set forth by the researchers, suggesting economic teachers should regularly include economic instructional practices geared toward rectifying student misconceptions to maximize their learning potential. A more recent study directed by Jackstadt, Johnson, and Wilson (2008) inquired about the degree to which economic experiments were instructionally feasible in high school economic courses. In economic experiments, popularized mostly in college-level economic courses, students utilize the scientific method to actively discover the meanings of economic concepts and principles by testing hypotheses about how markets operate, for example. Because of the often unfamiliar nature of this active learning instructional practice, the researchers trained teachers to implement economic experiments in their classrooms. While the impact of these teachers' use of economic experiments on student achievement was not measured, the researchers did describe the conditions under which such instructional practices were possible. Teacher survey responses suggested that economic experiments at the high school level are best operationalized when the basic format aligns with the school environment, which favors nonmonetary incentives over money incentives, paper-and-pencil over computerization, and curricula-based learning goals over more generic-based economic concepts.

Ideal Economic Instructional Practices

What, then, are the instructional practices that most significantly and consistently increase student achievement in economics in a way that meaningfully contributes to the goals of social studies education—preparing students for competent and productive democratic citizenship (NCSS, 2010; Wentworth & Schug, 1993)? While there is

widespread agreement on what economic content is essential for citizenship as prescribed by the CEE's *Standards*, the instructional practices that are most effective in teaching this economic content remain predominantly inconclusive, in part because of the extremely limited research base that currently exists on economic instructional practices. Despite this sparse body of research-based evidence, there does exist anecdotal evidence grounded in the experiences and best practices of economic educators who have proven track records, albeit not recorded by conventional research studies.

Noteworthy after reviewing much of the economic education literature is the widespread agreement among many economic educators who agree that the major goals of a high school economic course should be to not only teach students economic concepts and principles but to also teach them to apply the economic concepts and principles in a way that sharpens their analytical and decision making skills. However, also rarely debated is the idea that conceptual economic knowledge is needed to utilize such practical skills (Armento, 1987). This joint conclusion prevails in spite of the research that suggests economic courses grounded in concept-based instruction typically reap greater gains in achievement as measured by concept-based, standardized assessments such as the TEL (Miller & VanFossen, 2008). What is still up for debate, however, is the amount of instructional time these skill-based practices should occupy. Nevertheless, economic instruction should intentionally aim to explicitly show students how economics relates to issues in their everyday lives as well as in the societal issues that surround them (Armento, 1987; Morton, 1987; Rosales & Journell, 2012). According to some economic educators, the study of economics is so relevant to students' lives that it has potential to

become the basis for at-risk programs designed to empower often marginalized groups of students (Elder, 1991; Grimes, 1995).

The paramount importance of relating economic content to students' experiences was exemplified by Krueger and McIntosh (2008) who described a web-based questionnaire designed to aide teacher instructional practices by personally engaging students in economic learning. An interactive activity, the questionnaire inquires about student participation in the economy by asking about such things as consumption and employment. Teachers then obtain an automated listing of student responses as well as comparisons with corresponding national statistics. This report allows teachers to gain a first-hand understanding of student experiences as they relate to the economy which serves as a basis for introducing and relating economic content. Making economics relevant to students' lives also requires instructional practices that regularly provide specific, real-world examples, which is also described by most domain-specific literature for other subjects (Hirsch, 2001).

Also important in other subjects that teach deductive reasoning skills, economic educators recommend that students should be afforded frequent learning opportunities to practice economic reasoning skills that require the application of basic economic concepts and principles (Wentworth, 1987, 1997). Alongside of frequency, economic instructional practices should also incorporate a variety of student-centered, active learning activities. Activity-based economics, according to Lopus, Morton, and Willis (2003), consists of three basic instructional practices: emphasizing rigorous economic content; regularly integrating economic reasoning; and, including active, hands-on

learning methodology. The authors point out that simply memorizing economic content may initially appear as an increase in student achievement in economics, but real economic cognition is often demonstrated by students engaged in economic reasoning and other economic-related actions. Examples of activity-based economic instructional practices include role-playing, debates, simulations, panel discussions, current event analyses (Wentworth, 1987), and technology and Web-based interactive economic models (Robinson & Davies, 1999)

Economics is a social science, and while the state standards have been accused of overvaluing the "science" part of the discipline (VanFossen, 2006), others suggest refocusing instructional practices to include more of the "social" aspect of the discipline (Rosales & Journell, 2012). Students should experience this social aspect of economics as participants in activity-based economic learning as well as by using economic reasoning skills to better understand and offer solutions to personal and societal problems. Hahn (1991) goes as far as to suggest controversial issues should become the crux of economic education if students are to be genuinely prepared for citizenship. The ability to examine social issues, both controversial and noncontroversial, from multiple perspectives should also be an important outcome of economic instruction, argues Davies (2004), especially as students practice associating the inner workings of an economy to the social and moral citizenship behaviors required within. Moreover, effective economic instructional practices should teach students to make morally sound decisions (Schug & Clark, 2001) as well as to improve the quality of student arguments for or

against economic issues and policies grounded in a comprehensive understanding of economic concepts and principles (Davies, 2006).

Many of the aforementioned instructional practices have the potential to improve the enjoyment, usefulness, and difficulty of learning economics—three constructs that Phillips and Clark (1993) concluded were the underlying dimensions of student attitudes toward economics, as determined by a factor analysis of a portion of the nationally normed Survey of Economic Attitudes instrument. More broadly defined, Puglisi, Schurr, Booth, and Brandmeyer (1993) described effective economic instruction as utilizing a "whole language" approach whereby developmentally appropriate instructional practices are experience-based and activity-based and require students to use economic reasoning that culminates in ideas and actions for social change. Wentworth and Western (1990) also offer words of wisdom when they suggested that high school economic teachers should avoid unrealistically covering too much economic content, since productive citizenship does not require knowing everything that economists do, but rather should teach basic economic concepts, highlight the economic principles that show the relationships between the basic economic concepts, and then instruct students on how to inquire and reason using the economic principles.

Gaps in the Economic Education Literature

Most of the economic education literature base was established in the 1980s and 1990s. However, both Schug and Walstad (1991) and Miller and VanFossen (2008) documented the almost nonexistent state of economic education research focused on the comparative effectiveness of various types of instructional practices on student learning

of precollege economics. This gap in economic education literature is especially concerning since teacher instructional practices are a primary driver of student achievement, or in the case of economic education, a lack thereof. Also noted as significantly insufficient in these two seminal literature reviews were studies conducted to determine if the primary learning objective of economic instruction should be for students to learn economic concepts and principles, to learn economic reasoning skills, or a combination of both. This concept-based versus reasoning-based approach to economic instruction in Grades K-12 has been debated for many years within economic education circles (Schug & Walstad, 1991; Miller & VanFossen, 2008).

Additionally, calls have been made repeatedly for more qualitative research studies that include formal and direct observations of classroom teachers to more meaningfully understand current economic instructional practices (Schug & Walstad, 1991; Miller & VanFossen, 2008). As early as 1986, Berliner recommended that economic education researchers observe economic teachers who were identified as masterful teachers in order to document "best practices" in economic instruction to inform decisions about economic education policies and standards for teacher preparation and practices. In terms of research design recommendations, Becker, Greene, and Rosen (1990) and Brenneke, Highsmith, Soper, Walstad, and Watts (1988) suggested using case study methodology to capture what economic education looks like in practice, since each district, school, and teacher are potentially characterized by different levels of commitment to economic education as well as context-dependent instructional approaches, some successful and some not. Case study designs also capture interview,

observation, and artifact data in a way that gives voice to economic teachers and their students and provides detailed, nuanced descriptions of effective economic instruction.

Summary of Literature Review

After reviewing the economic education literature base, there is much work to be done in terms of understanding what types of knowledge economic teachers need to deliver quality instruction. A review of the literature does suggest, however, that effective economic instruction is in part dependent upon teachers' completion of university coursework in economics, teachers' economic course goals, the application of economic reasoning skills, and the inclusion of activity-based learning directly related to students' lives. Nevertheless, which economic instructional practices are most effective in terms of student achievement is far from being understood in ways that advance economic education teaching and learning. In this study, the PCK framework provided a comprehensive lens through which to investigate the knowledge base and instructional practices of three exemplary economic teachers with the intent of offering insight on what economic teachers need to know and be able to do to improve the historically low levels of student achievement in economics.

CHAPTER III

METHODS

Research Design

Economic education literature has predominantly consisted of quantitative research conducted by economists and published in the *Journal of Economic Education*, the field's premiere journal and mostly read by other economists. These studies have made valuable contributions to the field by reporting descriptive and inferential statistics that measure teacher and student characteristics as well as student learning outcomes, which have been historically characterized by low achievement scores. However, what is missing from the economic education research base are studies that richly describe and give meaning to the highly complex and nuanced nature of day-to-day economic instructional practices that statistics alone cannot fully explain, but rather require classroom observations and teacher interviews. Gaining further insight into the actual qualities of effective economic instruction, that is the "how's" and "why's," may provide a more complete understanding and another layer of analysis to what we already know about teaching and learning economics. After decades of economic educators calling for such qualitative studies, specifically case studies of economic instructional practices (Becker et al., 1990; Berliner, 1986; Brenneke et al., 1988; Miller & VanFossen, 2008; Schug & Walstad, 1991), the purpose of this study is to gain an in-depth understanding of

the personal orientations and economic instructional practices of three award-winning secondary economic teachers, using pedagogical content knowledge (PCK) as the theoretical framework.

Qualitative case studies, Merriam (1998) argues, are particularly useful when "there is a lack of theory, or existing theory fails to adequately explain a phenomenon" (p. 7), which in this case is how or why do some economic teachers develop economic understanding in their students while other teachers do not. More broadly, qualitative research is designed to better understand the intricacies of human behavior in its natural setting as well as the unique perspectives of the people involved through the holistic interpretations of the researcher (Glesne, 2011; Merriam, 2002). As such, this qualitative research study is philosophically rooted in constructivism (Creswell, 2003) and ontologically described by relativism (Creswell & Plano Clark, 2011)—that is, the nature of reality is multiple and constructed when it comes to understanding economic teacher instructional practices. Therefore, an interpretivist epistemological stance will be taken, as no separation exists between the knower and known since subjectivity defines the socially, culturally, and historically situated researcher's viewpoint (Tracy, 2010) which presupposes that qualitative, interpretive inquiry is value-laden (Creswell & Plano Clark, 2011).

Interpretivist inquiry strives to interpret participants' unique understanding, perspectives, behaviors, and language which naturally generate more than one way of knowing (Glesne, 2011), often inaccessible by mere quantitative statistics alone. Interpretive qualitative research assumes the researcher works under several basic

assumptions or predispositions such as converting the familiar into complex unknowns, capitalizing on how personal biases positively inform research outcomes in ways otherwise not possible, and not using research as a means to an end but as a means to asking new exploratory questions that problematize understanding and meaning (Schram, 2006). Interpretivist epistemology also considers understanding and interpretation to be synonymous and negotiated between the researcher and participants by interaction and conversation rather than discovery.

Therefore, this study was concerned with interpreting meaning and creating detailed descriptions of personal orientations toward economics and economic instructional practices as described and demonstrated by three exemplary economic teachers in high school classrooms, the naturalistic context of the study (Glesne, 2011). Currently lacking in the economic education literature, such "best practices" research goals are often needed to establish a guide for teachers in translating general pedagogical strategies into specific instructional practices unique to a particular discipline (Schug & Baumann, 1991; Shulman, 1987; Wineburg & Wilson, 1988). Learning from expert economic teachers holds great promise in capturing what effective economic instruction looks like in high school classrooms, and as such, provides an informative baseline for curriculum and standards writers (Schug & Baumann, 1991), teacher educators, professional developers, inservice and preservice teachers, and economic education and other social studies researchers.

The specific qualitative research design that was employed for this study was a collective case study design, which facilitated the investigation of multiple "bounded

systems" under the direction of one shared framework (Stake, 1995, p. 2)—a PCK framework, which Shulman (1987) recommended to use within the context of case studies in education. The particular type of collective case study design utilized was what Stake (1995) called an "instrumental case study" in which each case was "instrumental in accomplishing something other than understanding [a] particular teacher" (p. 3). Moreover, case study research as an interpretivist qualitative methodology (Glesne, 2011) best accomplished the research goals of this study for several reasons. First, collective and instrumental case study designs allow each case—in this study, each teacher represented a different case—to become both particularistic (Merriam, 1998) and instrumental (Stake, 1995) in allowing researchers to gain an in-depth understanding of the meaning of the phenomenon under study, both as individual cases and collectively as three cases (Stake, 1995), in an effort to improve economic instruction at the secondary level. Second, collective case study research, like other interpretivist qualitative methodologies, uses a design that is emergent, flexible, and interactive to achieve research goals related to making meaning of complex behaviors and perspectives (Maxwell, 2013) within and across each bounded system that defines the case (Merriam, 1998; Stake, 1995). The emergent design of case study research methodology also allows the flexibility needed to revise the case boundaries and protocols in order to not overlook undetected, yet significant sources of data collection that only become apparent as researchers intimately acquaint themselves with the highly complex and ever-changing realities of the classroom (Wells, Hirshberg, Lipton, & Oakes, 1995).

Other oft-cited benefits of using case study research methodology are the vicarious learning and experiential understandings that flow from the thick descriptions included in the study's findings (Geertz, 1973), often including verbatim excerpts from teacher-student interactions and conversations in the classroom (Mabry, 2008; Stake, 1995). This style of reporting the study's findings is often the next best thing to actually being a participant in the classroom under observation, increasing its contributions to educational research. This distinct form of qualitative research methodology is an efficient framework for explaining the "how's" and "why's" of the topic under study, which positions the reader to freely relate to the findings in a way that clarifies and co-constructs his or her own personal experiences and interpretations of reality (Stake, 1995). That is, case study research draws on the shared experiences of the readers as well as anticipates ideas that will be contested by the readers and offer insights accordingly. While this construction of knowledge process does not preclude researchers from offering assertions, it does mean that a primary focus is on "providing readers with good raw material for their own generalizing" (Stake, 1995, p. 102), what Stake and Trumbull (1982) call "naturalistic generalization." Further, while the findings of case studies are not generalizable to populations, they are the basis of assertions made by researchers (Stake, 1995), which have implications for advancing educational research by better informing teaching and learning theories.

Other important features of case study research methodology are the inherent triangulation of multiple data sources and data collection methods (Denzin, 1984), which add validity to the findings (Mabry, 2008; Stake, 1995). Lastly, the case study

researcher's role of interpreter uniquely positions him or her to give voice to new meaning, eloquently described by Stake (1995) as follows:

> The researcher struggles to liberate the reader from simplistic views and illusions. The researcher is the agent of new interpretation, new knowledge, but also new illusion. Sometimes, the researcher points to what to believe, sometimes facilitating reader understandings that exceed the comprehension of the researcher. The researcher helps extend the elegant intricacy of understanding but meticulous readers find the infinite void still lying just beyond. (p. 99)

In other words, meaning is not static, but rather is fluid on both individual and societal levels; thus, what is captured and interpreted by a researcher is always subject to change based on new contexts, experiences, or simply the passage of time.

The next section takes a look at the general characteristics of the counties, school districts, and schools in which the three teachers were employed, followed by detailed descriptions of each teacher participant, her students, the economic course, and her classroom. Identifiable features of the schools and participants have been anonymized, including the use of pseudonyms, to ensure confidentiality. All necessary precautions and procedures have been approved by and prepared in accordance with the research guidelines set forth by the Institutional Review Board for the protection and ethical treatment of human subjects.

Setting of the Study

A southeastern state was the geographic location of this study, in part, because this state was one of 22 states that required all high school students to take a semester of economics for standard and advanced high school diplomas during Grades 9-12 at the

time of the study. This separate economic course, mandated during the 2011-2012 school year, provided increased opportunities to observe economic instruction as opposed to the more traditional approach wherein economic content is infused in other social studies subjects. The state gave permission to teach the course to Career and Technical Education (CTE) teachers, social studies teachers, and mathematic teachers. The state also required that economic content was included in all Grades K-12 state social studies standards and tested at the end of Grades 3-11 using state testing instruments. This prioritization of economics made the state a sensible setting for this study.

The two school districts in which the three participants taught were located in two counties juxtaposed to a mid-size city in the state. These locations were chosen for a few important reasons. First, the areas were within driving distance from the Center for Economic Education at a local college, which provides yearlong programing in economic education professional development for Grades K-12 teachers employed by the surrounding school districts. The Center for Economic Education promotes and models active learning instructional practices at each professional development program and also offers both innovative curriculum awards as well as achievement awards in economic education each year. Local award winners advance to the state competition for greater recognition and monetary rewards. The three teacher participants in this study had not only attended numerous professional development programs offered by the Center for Economic Education but had also won awards. Therefore, these teacher participants were well suited for investigating the PCK of exemplary economic teachers. This geographic region of the state was also the place where I lived for 12 years before enrolling in a

doctorate program, and the place where I am well-connected within the surrounding school districts as a result of my tenure as the director of the Center for Economic Education from 2000-2010. The three schools involved in this study were located in a conservative part of the country, religiously and politically, and were part of two different school districts.

Anderson High School

According to the U.S. Census Bureau, the 2013 population estimate for the county in which two of the three schools were located—Anderson High School and Bailor High School—was 55,235 people, with a racial breakdown of 83% White, 15% Black or African American, and 2% Other. From 2008-2012, 84% of the population earned a high school degree or higher, while only 17% earned a bachelor's degree or higher. During the same timeframe, 77% owned their own home with a median household income of $45,432. Fourteen percent of the population lived below the poverty level. The 511 square miles of land area had an economy heavily dependent on the following industry groups, starting with the industry group employing the most people: manufacturing, retail trade, construction, educational services, and healthcare and social assistance. The 2013 unemployment rate was 7%.

Anderson High School was one of two combined middle and high schools—that is, Grades 6-12—in the school district, along with two other traditional high schools, two middle schools, eight elementary schools, and a technical center. The racial demographics of the school's population of 733 students included 69% White, 26% Black, and 5% Other at the time of the study. Almost 44% of students at Anderson were

eligible for the national free and reduced lunch program. Based on the previous year's achievement scores, the school was fully accredited for 2012-2013 with no improvement plan or Title I federal accountability; all subgroups met the minimum passing rate target for all achievement tests administered. The school's 2013 graduation rate for all students was 76%, seven points lower than the state's graduation rate of 83%. While Whites and Blacks graduated at similar rates as the overall student population, 74% and 79%, respectively, economically disadvantaged students graduated at a disproportionally lower rate of 65%.

In terms of the percentage of students passing achievement tests, an average of 80% of all students passed the English test, five points higher that the state average of 75%, with White students passing at a rate of 86%, Black students at 63%, and economically disadvantaged students at 72%. The percentage of overall students who passed the mathematic test was 69%, only 2 points lower than the state average. Passing mathematic test scores were achieved by 76% of White students, however, only 50% of Black students and 54% of economically disadvantaged students. In addition, 13% of the student body took an Advanced Placement (AP) exam, but there were no students classified as dually enrolled or participants in the local Governor's School. Only 8% of the students completed a CTE program. Finally, all core academic teachers at the school were considered "highly qualified" according the federal definition, with 59% of the teachers attaining a bachelor's degree and 41% attaining a master's degree. Table 2 below summarizes basic demographic data for each of the three schools and its students.

Table 2

School and Student Demographics

2012-2013 Demographics	Anderson High School	Bailor High School	Langley High School
Total student population	733	1,031	951
Whites	69%	82%	82%
Blacks	26%	13%	13%
Other	5%	5%	5%
Free/reduced lunch eligibility	44%	26%	42%
Overall graduation rate	76%	86%	81%
Overall students passing English test	80%	94%	84%
Overall students passing math test	69%	75%	38%
Highly qualified teachers	All	All except 2	All except 1
Bachelor's degree	59%	53%	49%
Master's degree	41%	46%	51%

Bailor High School

Also located in the same county as Anderson High School, Bailor High School reported more favorable statistics across the board as compared to its district counterpart, the third school selected for this study. Of the school's 1,031 students in Grades 9-12, 82% identified as White, 13% as Black, and 5% as Other. Almost half as many students at Bailor qualified for free and reduced lunches compared to Anderson, with an eligibility rate of 26%. Also similar was the school's fully accredited state status with no Title I federal accountability. All students also met or exceeded the minimum passing rate target, therefore, no improvement plan was in place. However, the 2013 student graduation rates were exceedingly higher than those reported for Anderson High School:

86% of all students at Bailor graduated, up three points from the state average of 83%; 85% of White students; 87% of Black students; and 76% of economically disadvantaged students.

A more favorable story also unfolded with passing rates on English and mathematic achievement tests. A total of 94% of all students at Bailor passed the English test, nearly 20 points higher than the state average, with White students passing at a rate of 94% and Black students at 90%. Regarding mathematic scores, fewer students passed the test with a 75% pass rate, with 75% of White students passing and 71% of Black students passing. However, also disproportionately more favorable at Bailor was the nearly 31% of students who took an AP exam, 3% who were dually enrolled, and 3% who attended classes at the local Governor's School. Almost 10% of students completed a CTE program during the 2012-2013 school year. Two core academic teachers during the 2012-2013 school year were not considered highly qualified according to federal standards, and 53% of teachers held a bachelor's degree and 46% held a master's degree.

Langley High School

The third of three schools that participated in this study, Langley High School was located in a county that had a 2013 population estimate of 69,825 people, as reported by the U.S. Census Bureau, consisting of 92% White, 6% Black, and less than 2% Other. As recorded during 2008-2012, 87% of the county residents had earned a high school degree or higher, while 25% had earned a bachelor's degree or higher. The homeownership rate was 85% of the people who earned a median household income of $56,906. Nine percent of the population lived below the poverty line. A land area of 753 square miles, the

county's largest industry was agriculture, particularly cattle, followed by retail trade, manufacturing, health and social assistance, and waste management; the 2012 unemployment rate was 6%.

Langley High School was located in a school district that had two other high schools, an alternative education center, a science and technology center, three middle schools, and 15 elementary schools. At the time of this study, Langley had a student population of 951 students in Grades 9-12 whose racial demographics breakdown was as follows: 82% White, 13% Black, and 5% Other. Nearly 42% of students were eligible for the national free and reduced lunch program. What was different about Langley was its state accreditation status of "accredited with warning" for failing to meet the mathematic accreditation benchmark of 70% with only a 56% pass rate across all student groups as well as the low percentage of Black students passing the English test at 50%. However, like the other two schools, no improvement plan had been required, and Langley had no federal accountability in terms of Title I. Less alarming were the student graduation rates with an average of 81% of all students in 2013; Whites at 79%; Blacks 10 points higher than Whites at 89%; and economically disadvantaged at 72%.

While the percentage of students who passed the English state test was 84% overall, almost 10 points higher than the state average, 94% of White students passed yet only 50% of Black students passed. Also problematic were the extremely low percentages of students who passed the mathematic exam: only 38% of all students passed; 42% of White students passed; 18% of Black students passed. Fourteen percent of all of Langley's students completed a CTE program, the highest percentage of

completers among all three schools. AP exams were taken by 22% of students, and 8% of students were dually enrolled. No students attended the local Governor's School. Only one core academic teacher was not considered highly qualified during the 2012-2013 school year and, like the other two schools, about half of the teachers attained a bachelor's degree at 49% and about half attained a master's degree at 51%.

Participants

Using purposive sampling (Creswell, 2007) similar to Schug and Baumann's (1991) study, the three high school economic teachers selected for this study were recent winners of the regional and/or state Outstanding Economic Educator Award, given annually by the director of the Center for Economic Education located at a nearby college in the state. This career-achievement award is given to teachers who demonstrate a sustained commitment to economic education over a number of years. Nominees write a personal essay describing their outstanding contributions to economic education in terms of their leadership, professional development, and student comprehension and achievement. Up to two supporting letters of recommendation are also required.

The three teachers were also regular participants in the Center's professional development programming, which is based on active learning, skills-based, multidisciplinary demonstrations of economic lessons that teachers will hopefully use in their classrooms. These selection criteria were chosen to decrease the likelihood of studying teachers who overuse traditional lecture to convey economic content as opposed to a variety of instructional practices. The three teachers selected also had at least five years of teaching experience, in keeping with research findings that suggest PCK

development is dependent on teaching experience (Abd-El-Khalick, Bell, & Lederman, 1998; Friedrichsen, Van Driel, & Abell, 2011; Hanuscin, Lee, & Akerson, 2010).

Using test scores to determine the "best" economic teachers was not chosen as a sample selection criterion because high test scores do not necessarily equate to ideal teaching practices. Research in social studies, for example, shows that teachers often rely on more passive, teacher-centered instructional practices, often aimed at "teaching to the test," rather than delivering powerful instruction aimed at equipping students with citizenship knowledge and skills (Friedman & Heafner, 2007; Goodlad, 1984; Swan & Hofer, 2008). One social studies teacher and two CTE teachers were selected because they were the most recent Outstanding Economic Education Award recipients and for the purposes of an exploratory study, I wanted to cast the widest net possible guided by maximum variation sampling (Merriam, 2002). The primary research goal was to learn as much as possible from all three teachers in a way that best illuminated the research questions (Stake, 1995) which sought to describe the personal orientations and PCK of three exemplary secondary economic teachers during the Fall 2014 semester.

Ms. Miller at Anderson High School

Prior to becoming a high school teacher, Ms. Miller held several jobs in business and served as an adjunct faculty member at the nearby community college and an adult educator for business and government. When asked during the pre-interview why she became a CTE business teacher, Ms. Miller said that she always knew she wanted to be a teacher, dating back to the first grade. After several years in business, Ms. Miller decided to pursue her first career choice as an educator and went back to school.

Ms. Miller's academic degrees included an Associate of Applied Science in business management, a Bachelor of Science in business education, and a Master of Science in vocational and technical education. During her degree coursework, she completed three college-level semester courses in economics, including an introductory economic course, microeconomic course, and macroeconomic course. Since graduating with her Master's degree, she earned two graduate credits by completing an online economic course on the economic demise of the former Soviet Union and three graduate credits by completing a content-specific methods course in economics for K-12 educators. Over the past 10 years, Ms. Miller also participated in approximately 150-200 professional development hours in economic education, although she felt almost certain that this was a conservative estimate.

Going on her 24th year of teaching at the same high school, Ms. Miller had taught business education courses to students in Grades 8-12, including accounting, computer information systems, business law, and business management, to name a few. This was the fourth year that Anderson High School had offered the state's required semester course in economics in a yearlong combined course format with the state's required semester course in personal finance; Ms. Miller had taught the combined yearlong course all four years. During the 2014-2015 school year, Ms. Miller held the following extra-curricular positions: Business Education Department Chair, Future Business Leaders of America (FBLA) Advisor, Vocational Advisory Board and Public Awareness Chair, Economic Education Advisory Board for Central Virginia Schools Member, and Summer School Facilitator.

Of the three teachers in this study, Ms. Miller won the most economic education teacher awards during the last five years, including two regional curriculum awards and one state curriculum award for creating innovative lessons and units in economic education at the high school level. Ms. Miller also won the regional Outstanding Economic Educator Award in 2011, the selection criteria by which she and the other two teachers were chosen to participate in this study as an exemplary secondary economics teacher. With respect to non-economic education teacher awards, Ms. Miller was voted Teacher of the Year by Anderson High School in 1999 and 2013, the Best Teacher by a local news journal in 2012, and the Outstanding Teacher of the Year by the local Chamber of Commerce in 2013. In addition, she was one of 150 secondary economic educators in the nation to attend a professional development seminar on business and financial responsibilities at a prestigious business school in another state. Students in Ms. Miller's economics and business classes have won an equally long list of awards for co-curricular competitions at the regional, state, and national levels, including the Governor's Challenge in Economics and Personal Finance, Stock Market Game™, and various FBLA competitions in economics.

Ms. Miller's students. For the school year during which this study took place, Ms. Miller taught five sections of the yearlong economics and personal finance course and one section of Advanced Accounting on a 50 minute class period schedule. For the purposes of this study, I observed Ms. Miller's sixth period class which met from 1:06-1:56 on Monday, Wednesday, and Friday and from 1:18-2:02 on Tuesday and Thursday to allow for a study hall period two days a week, designed for students to make-up work

or receive tutoring from teachers and other students. Ms. Miller's sixth period class included students from all grade levels and ability levels. See Table 3 for a demographic profile of students in each teacher's observed class.

Table 3

Demographic Profile of Students in Each Teacher's Observed Class

	Ms. Miller Anderson High School	Ms. Levitt Bailor High School	Ms. Williams Langley High School
Total Students	20	21	18
Male	9	11	8
Female	11	10	10
Race			
White	12	19	12
Black	6	0	4
Asian	2	1	0
Mixed	0	1	2
Grade			
Grade 9	1		
Grade 10	10	10	9
Grade 11	6	8	6
Grade 12	3	3	3
Ability Level			
Advanced	9	3	4
General	6	15	10
Special Educ.	5	3	4

Ms. Miller's economic course. When the economic semester course became a state graduation requirement four years ago, Ms. Miller said she was given permission to stretch the course over a yearlong format, which she "loved." Two years ago, her school

district decided to combine the required economic semester course and the required personal finance semester course into a yearlong format. However, like the other two teachers, Ms. Miller said she still primarily only taught basic economic concepts and microeconomic content, along with introductions to macroeconomics and international economics, during almost all of the first semester since she believed it laid the foundation for the personal finance content that began at the end of the first semester. Then, after teaching about four months of personal finance content with economic content revisited throughout, Ms. Miller's students took the WI$E Financial Literacy Certification test (WI$E test) near the end of April. While this test mainly assessed personal finance concepts and skills, several of the questions used economic concepts such as *opportunity cost* and *incentives* to ask the questions. Currently, there was not a district or state test assessing the economic portion of the course. Students who passed this national standardized test in personal finance were designated as "financially literate" and could use this personal finance certification to meet the state's vocational certification requirements for students earning a standard diploma. For the remainder of the school year, usually about six weeks, Ms. Miller finished covering macroeconomics and international economics. In an ideal situation, Ms. Miller said she would prefer teaching a yearlong course in economics and a yearlong course in personal finance, but she realized that most students already had an overcrowded class schedule.

Five years ago, Ms. Miller's school district asked her and a former CTE business teacher at another high school to create a crosswalk of the state's learning standards for the new economic course—based on the *Voluntary National Content Standards in*

Economics (CEE, 2010)—and the state's competencies for a similar CTE economic course that had been around ever since Ms. Miller had become a teacher. Ms. Miller and the other economic teachers in her school district followed this crosswalk and pacing guide that Ms. Miller also helped create. Ms. Miller expressed a favorable opinion of the state's economic learning standards and competencies, which were almost identical, because they covered important microeconomics, macroeconomics, and international economic content, in her estimation, as well as an adequate mix of concept-based and skills-based economic content. As her primary instructional resource, Ms. Miller relied on a classroom set of *Econ Alive! The Power to Choose* (VanFossen, 2010) textbooks and the accompanying instructional resources, including student note guides and hands-on activities. Occasionally, Ms. Miller supplemented this curriculum package with the economic lessons that she was given when she attended economic education professional development programs offered by the local Center for Economic Education.

Ms. Miller's classroom. Ms. Miller's classroom was a spacious room on the second floor of Anderson High School with an adjoining office large enough for three or four CTE teachers. Because Ms. Miller was currently the only business education teacher, the office space was used as equipment storage for items such as classroom televisions, carts, and FBLA fundraising materials. The classroom space also served as a computer lab for business students, so in addition to the rows of tables and chairs in which two students sat per table, about 25 computer stations lined three of the four walls in a U-shape formation. Ms. Miller's desk and filing cabinets were positioned at the front of the room where the whiteboard covered an entire wall behind her podium and stool.

Unchanged throughout my observation period, one bulletin board added décor to the classroom which Ms. Miller's students helped to create during the first week of school. To introduce the definition of economics contained in the classroom set of textbooks—"the study of how people choose to use their limited resources to satisfy their unlimited wants" (VanFossen, 2010, p. 3)—Ms. Miller had students write down something they dreamed of purchasing one day on a sticky note, which was then connected to a large dollar sign in the middle of the bulletin board using yarn. At the end of her four months of instruction on personal finance, scheduled to begin in the middle of December, Ms. Miller said she was going to have students replace their sticky notes with a brief explanation of how they planned to accomplish their purchasing goal or suggest a new, more realistic good or service to purchase.

Ms. Levitt at Bailor High School

Ms. Levitt's previous career before becoming a teacher was an administrative assistant for a large school district in the state. When asked why she became a secondary social studies teacher, she said that from an early age, she wanted to be a teacher because while growing up, she played school all the time. Returning to her original career goal of becoming a teacher later in life, Ms. Levitt earned a Bachelor of Science degree in history and social science with a secondary teaching endorsement to teach social studies at the middle and high school level. It was at this time that she developed a genuine passion for teaching and reaffirmed her calling to teach.

During her coursework, Ms. Levitt took four courses in economics and since graduating, she had participated in about 30 hours of professional development in

economic education in addition to completing a graduate course in personal finance education and an online graduate course in content-specific economic methods for high school teachers. Now in her 11th year of teaching, Ms. Levitt had taught eight years at a nearby middle school and three years at Bailor High School. At the middle school level, she taught U.S. history and civics and economics as well as elective courses in personal finance and economics. After the first year Bailor High School offered the yearlong economics and personal finance course four years ago, Ms. Levitt was recruited by Bailor's principal to transfer to the high school level in order to teach the course, which she had done for the past three years at the time of this study. During the present school year, Ms. Levitt served as a member of the Economic Education Advisory Board for Central Virginia Schools, co-chair for the 2015 After Graduation Party Committee, and team-mom for the Varsity Volleyball Team. With regard to teacher and student awards, Ms. Levitt was the regional Outstanding Economic Educator Award in 2013. At the middle and high school levels, Ms. Levitt's students won regional and state awards for their participation in the Stock Market Game™ for the past seven years.

Ms. Levitt's students. Ms. Levitt taught six sections of the economics and personal finance yearlong course on a 50 minute class period schedule during the 2014-2015 school year. The students in Ms. Levitt's class who participated in this study attended her fourth period class that ran from 10:48-11:40 on Monday, Wednesday, and Friday and from 11:08-12:00 on Tuesday and Thursday to allow for a school-wide study hall for students to make-up work and receive tutoring. The students in Ms. Levitt's fourth period class included students from most grade levels and ability levels, however,

her class was the least racially diverse of the three teachers. See Table 3 for a demographic profile of the students in Ms. Levitt's observed class.

Ms. Levitt's economic course. Despite being in the same school district as Ms. Miller, the economic course at Bailor High School had always been combined with personal finance in a yearlong format. Like Ms. Miller, however, Ms. Levitt used the same instructional pacing guide and crosswalk of the state's learning standards and competencies. Ms. Levitt thought that teaching most of the economic content during the first four months of school before crossing over into the personal finance content was an effective strategy because it allowed her to keep referring back to and thus reinforcing the economic content during her personal finance instruction. While she had a classroom set of *Econ Alive! The Power to Choose* textbooks, she rarely used them and instead preferred to use the economic education lessons she received each time she attended an economic education professional development program hosted by the local Center for Economic Education. Ms. Levitt also thought that the crosswalk of learning standards and competencies represented a good mix of concept-based and skill-based economic content, but she thought a few of the standards (e.g., fiscal and monetary policy standards) contained too much detail, thus over the heads of most high school students and somewhat unnecessary to know in order to be considered economically literate citizens. Ms. Levitt also administered the WI$E test in April.

Ms. Levitt's classroom. Ms. Levitt's classroom space was fully utilized with rows of desks and attached chairs in a U-formation that surrounded a stool and table on which the LCD projector and overhead projector was placed, facing the whiteboard about

five feet away. Ms. Levitt's desk, filing cabinets, and bookshelves lined the wall located to the right of the whiteboard, behind which a bulletin board was mounted with the title "Who wants to be a millionaire?" and decorated with coins and piggy banks that included tips for smart financial management such as "set goals," "spend wisely," "save," and "be smart with credit." Across the room was another bulletin board that said "Develop your human capital" and included six mini-posters in the format of help-wanted ads that said things like "Wanted: Cooperative learner who helps others, is a team player, and resolves conflict." When student assignments involved the Internet, Ms. Levitt borrowed a classroom set of laptops that belonged to the social studies department.

Ms. Williams at Langley High School

Prior to becoming a high school teacher, Ms. Williams pursued a business career and taught business courses in a post-secondary trade school. Ms. Williams became a CTE business teacher "for the rewards and scheduling," including having summers off, and the "opportunity to share what you know with others." After earning a Bachelor of Science degree in business and a Master of Business Administration degree, Ms. Williams enrolled in a lateral entry summer teacher education program to obtain her secondary teaching license. Collectively, Ms. Williams had taken five economic courses while obtaining her two degrees and one graduate course in content-specific methods for K-12 economic educators since becoming a high school teacher. Additionally, Ms. Williams estimated that she had participated in more than 350 hours of professional development in economic education over the last 10 years.

Coming up on her 15th year as a CTE business teacher in the same school district, Ms. Williams had taught courses such as keyboarding, Microsoft Word applications, and principles of business and marketing at Langley High School for eight years after teaching at another high school for seven years. This was the fourth year Ms. Williams' school district had offered the yearlong economics and personal finance course, and Ms. Williams had taught the course all four years. During the 2014-2015 school year, Ms. Williams also served as the Varsity Cheerleading Coach, Junior Class Sponsor, and Prom Sponsor.

In 2014, Ms. Williams won the regional and state Outstanding Economic Educator Award and was recognized as a Capital One Blue Ribbon National Teacher of Economics and Personal Finance. Several years earlier, she won a regional and state curriculum award for an innovative lesson in economic education as well as Teacher of the Month at her high school. Ms. Williams was also selected to serve on the Economic Education Advisory Board for Central Virginia Schools and the Superintendent's Teacher Advisory Council for her school district. Ms. Williams' students had won regional and state awards for their participation in the Stock Market Game™, Governor's Challenge in Economics and Personal Finance, and Investwrite®.

Ms. Williams' students. The students who were observed in this study were enrolled in Ms. Williams' third period class, which was the only period to meet every day from 12:30-1:30 for the entire school year. First, second, and fourth period were on a 95 minute block schedule that met only during the first semester, with first and second period also being the economics and personal finance course and fourth period being a

Computer Information Systems course. See Table 3 for a demographic profile of students in Ms. Williams' observed class.

Ms. Williams' economic course. Ms. Williams' school district had offered the economic course in a yearlong format combined with personal finance for four years, and Ms. Williams had taught the course all four years. As a state graduation requirement for all students, Ms. Williams thought the combined course format made the most sense because the two courses were interrelated which helped make the economic content more user-friendly. Ms. Williams did not use a textbook but rather relied primarily on the many lessons she collected from attending economic education professional development programs delivered by the local Center of Economic Education. Despite being a CTE business teachers, Ms. Williams followed the state's learning standards for the course, and like Ms. Miller and Ms. Levitt, she thought the standards were a good mix of microeconomics, macroeconomics, and international economic content and concept-based versus skilled-based economic content. However, more so than the other two teachers, Ms. Williams thought that much of the detail contained in the standards was too advanced for a regular economic course required for all high school students, regardless of ability levels. Dissimilar to the other two teachers, Ms. Williams covered all the economic content during the first semester and was only planning on reviewing and re-teaching economic content that she thought students still did not understand after the WI$E test in late April. There was not a separate district-level test for the economic portion of the course.

Ms. Williams' classroom. Ms. Williams' classroom was a spacious computer lab with about 25 computer stations lining three of the four walls in a U-shape formation with an LCD projector mounted to the ceiling. There were not student desks in the center of the room, just open space and a large table for instructional materials in front of Ms. Williams' podium and stool. An adjoining office designed for two or three CTE teachers was filled mostly with cheerleading and prom items, as the three CTE teachers at Langley High School used their classroom desks as offices. Ms. William's desk was positioned in the front of the room, alongside her filing cabinets. While there was not a bulletin board in the classroom, Ms. Williams hung eight mini-posters featuring definitions of basic economic concepts such as *scarcity*, *interdependence*, and *producers* and *consumers* along one wall. On the wall across the room was a blackboard on which Ms. Williams hung more mini-posters depicting literacy tools such as Venn diagrams, cause and effect maps, and classification hierarchies.

Data Collection

Rooted in ethnographic tradition, the data collection methods used in this study included classroom observations, teacher interviews, teacher questionnaires, student pre/post-tests, student pre/post-surveys, teacher and student artifacts, and researcher memos (Atkinson & Hammersley, 2007). The nature of the data collected by each of these methods was guided by a PCK theoretical framework in an effort to interpret the intricacies and particularities of the primary data sources, including teacher and student words, actions, and artifacts in the context of a high school economic classroom (Glesne, 2011). Table 4 provides a crosswalk of the data collection methods based on the two

research questions that guided this study. Additionally, each data collection method is detailed below.

Table 4

Data Collection Methods by Research Questions

Research Questions	Classroom Observations	Interviews/Questionnaires/ Surveys/Tests	Artifacts
What factors shape the personal orientations of award-winning secondary economic teachers toward economics, and how do these factors influence their instruction?	Observe patterns of economic content presented and instructional practices used that might support teachers' personal orientation toward an economic course	Identify factors that shape teachers' personal orientations toward an economic course Teacher interviews and questionnaires - Identify experiences, disciplinary background, course beliefs, instructional goals, and political leanings	Examine how economic lesson plans, projects, assignments, and assessments align with and digress from teachers' personal orientations
How do award-winning secondary economic teachers demonstrate pedagogical content knowledge (PCK) in their instruction in terms of horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students?	Observe subject-specific instructional practices used to teach economics Observe student participation and apparent interest in economic instruction	Identify the types of economic content taught and the related instructional practices used Teacher interviews - Identify common student misconceptions and instructional remedies - Identify reasons for using particular subject-specific instructional practices and desired student outcomes Student pre/post-surveys and pre/post-tests - Provide context by identifying student attitudes toward and knowledge of economics as well as student perceptions of effective and ineffective economic instruction	Examine economic learning standards, lesson plans, projects, assignments, and assessments

Classroom Observations

The primary method of data collection was classroom observations with an emphasis on personal orientations toward economics and economic instruction practices. Each teacher was observed two or three times per week over approximately15 weeks during the first semester of the 2014-2015 school year, depending on when data saturation was reached (Glaser, 1978). This prolonged observation period allowed for about four months of observations (Maxwell, 2013; Merriam, 2002), resulting in potentially more opportunities to observe a variety of instructional practices covering a wider breadth and depth of economic content. Each teacher was observed about 30 times, providing the thick, rich description (Geertz, 1973; Stake, 1995) necessary for readers to gain an in-depth understanding of the cases in a way that meaningfully resonates (Tracy, 2010) and facilitates connections to similar, more personal contexts and experiences (Schram, 2006). A conscious effort was made to observe each classroom when active instruction took place, which meant test days and independent computer lab work days, for example, were avoided. Field notes included teacher and student observations as they related to economic instructional practices, guided by the observation protocol (Merriam, 1998) found in Appendix A. Additionally, my feelings, insights, and questions about what I observed were typed in my field notes (Spradley, 1980) and researcher memos (Merriam, 2002) usually within 12 hours of the observation.

During observations, I assumed the role of participant-observer (Merriam, 1998) and engaged in mostly low levels of participation to focus more on recording field notes in real time (Glesne, 2011), only occasionally participating by circulating around the

room when students were engaged in group work. This emphasis on observer rather than participant also allowed time for writing preliminary interpretations on the spot for further reflection and analysis at a later time. Also advantageous was the potentially minimizing effect of my own active learning instructional biases by resisting the temptation to share instructional suggestions during lessons that may have altered what the teacher would have otherwise done in a more naturalistic setting. Lastly, under the premise that there are no objective observations but rather only observational data socially constructed between the researcher and the participant (Denzin & Lincoln, 2011), I made deliberate use of Spradley's (1980) three principles for recording accurate field notes. The first principle, the language identity principle, reminded me to use quotation marks and italics to distinguish between participants' speech and my thoughts, respectively. The verbatim principle, the second principle, required writing down as much of what the participants said as possible in real time. Classroom observations were, however, unable to be audio-recorded because not all of the students in each class brought back a parental consent form. The third principle, the concrete principle, meant writing field notes that contained as much tangible, descriptive detail as possible.

Teacher Interviews and Questionnaires

Interviews, the second method of data collection, were used because no single method can capture all the nuanced variations in complex human behavior and thinking (Denzin & Lincoln, 2011) or provide sufficient understanding of teachers' personal orientations toward economics and PCK (Friedrichsen et al., 2009). Moreover, teacher interviews provided the opportunity to gain a better understanding of PCK in economics

by asking teachers to explain their ideas about the pedagogical affordances and constraints of particular instructional practices demonstrated. Insight into the degree of PCK effectiveness was also gained during interviews by asking teachers to share their perceptions of student engagement. The data obtained from the teacher interviews provided the means by which to triangulate the extensive observation data collected, thereby increasing the validity of the findings. The mid/post-interview protocols included follow-up questions I had recorded in my observation field notes and researcher memos throughout the entire observation period, some of which were designed to validate or challenge my interpretations (Maxwell, 2013).

Using a semi-structured interview format (Merriam, 1998) guided by interview protocols, the interview questions were used to gather more data on the research questions, triangulate classroom observation data (Stake, 1995), and provide interpretations of and give voice to the teachers' perspectives and experiences (Glesne, 2011). All interviews lasted approximately one hour and asked singular, clear, and open-ended questions (Patton, 2002) about teacher experiences, behaviors, opinions, and perceptions, guided by a PCK theoretical framework and interpretivist goals (Schensul, Schensul, & LeCompte, 1999). Prompting questions (Patton, 2002) were also asked on an as-needed basis. A card sort activity was included in the pre-interview that asked teachers to rank-order four previously identified economic instructional goals (Highsmith, 1990; Schug, Dieterle, & Clark, 2009) while discussing their rationale behind the rankings based on their own economic instructional goals. Interviews took place in the teacher's classroom for privacy purposes and were audiotaped, transcribed

verbatim by a third party, and added to the handwritten notes I took during the interviews.

The three interviews conducted for each teacher throughout the semester included a pre-interview the week before school started during teacher workdays, a mid-interview about half way through the 15 week observation period, and a post-interview two weeks after the observation period ended. The pre-interview was designed to understand the origins of each teacher's content knowledge in economics; PCK and related practices unique to the teaching and learning of economics at the secondary level; and, personal orientations toward economics (i.e., valuable experiences, disciplinary background, economic course beliefs and instructional goals, and political leanings). See Appendix B for the pre-interview protocol which was the same for all three teachers.

Mid-interviews were conducted halfway through the observation period, and post-interviews were conducted about three weeks after the observation period ended in order to process observation field notes, unanswered researcher questions, new questions that arose, preliminary inferences, and researcher memos recorded throughout the data collection period unique to each teacher's experience. Teachers were also given the opportunity to reflect on the degree to which their instructional practices had been effective, including reminders of particularly interesting happenings that either they or I noted, followed by their own personal explanation of instructional decisions. During the post-interview, selected student post-survey and post-test data were shared with teachers in order to gain their perspectives about the increases and decreases in students' economic attitudes, knowledge, and skills. See Appendices C-E for each teacher's mid-

interview protocol and Appendices F-H for each teacher's post-interview protocol. The ultimate goal was to create the most valid interpretation of the teachers' personal orientations toward economics and PCK in economics.

Rather than take time during the pre-interviews, basic demographic data, measures of disciplinary preparation (Monte-Sano, 2011), and other data were gathered by an electronic pre-questionnaire that was emailed to the teachers one week before the pre-interviews were scheduled. The questionnaire also included two statements to which teachers responded using a Likert scale ranging from "strongly disagree" to "strongly agree" as well as open space for teachers to write their reasons for the ratings. The two statements were designed to establish a preliminary baseline of the teachers' confidence in their level of economic content knowledge, as required to teach a high school economic course, and in their ability to deliver effective economic instruction to high school students (Swan & Hofer, 2011). Teachers were asked to email the completed questionnaires back to me before the pre-interviews took place so that I could review the information and formulate follow-up questions, if needed, in preparation for the pre-interviews. A post-questionnaire was emailed after the observation period ended to gather data needed to answer unresolved questions that remained. Open-ended questionnaire statements used the same data analysis methods used for observation and interview data. See Appendix I and Appendix J for copies of the pre-questionnaire and post-questionnaire, respectively.

Student Surveys and Tests

During the first or second week of classes, depending on when students returned their consent forms, students in the three classes under study completed a pre-survey assessing their attitudes toward and basic disciplinary understanding of economics. The survey format consisted of 15 statements using a five-point Likert scale on a continuum of "strongly agree" to "strongly disagree." The survey statements were designed to gain a general sense of the importance students placed on having opportunities to learn about and discuss economics and the degree to which students thought economic knowledge and skills would serve them as adult citizens such as when voting and understanding the news. Basic background demographic data was also collected on the pre-survey.

The post-survey, which was administered during the last two weeks of the observation period, contained the same 15 statements, however, it also asked open-ended questions concerning student perceptions about the effectiveness of their teacher's instructional practices as well as how they anticipated using their new economic knowledge and skills in the future. Both the pre/post-survey responses were measured by calculating response means and standard deviations for comparison purposes between pre/post-surveys within each class and across all three classes. Open-ended survey questions used the same data analysis methods used for observation and interview data. See Appendix K and Appendix L for a copy of the pre-survey and post-survey, respectively.

With the teacher's permission, I also administered the Test of Economic Literacy (TEL) at the beginning and end of the observation period to collect pre/post-test data, for

which class means and standard deviations were calculated for comparison purposes within and across classes. Because the teachers had not taught all of the economic content by the time the test was administered near the end of the semester, I only scored the test questions that the teachers singled out based on their content coverage. See Appendix M for a copy of the post-test.

Artifacts

Informed by Spradley's (1980) general definition of an artifact, a teaching artifact is what teachers create and use to facilitate student learning. Examples of teaching artifacts collected for the purposes of this study included the following items: district and state standards, lesson plans, projects, assignments, and assessments related to the teaching of economics. Other types of instructional materials included worksheets, handouts, and website addresses. Whenever possible, I collected artifacts of student work that demonstrated economic understanding. If relevant artifacts were produced but could not be collected, such as bulletin boards and posters, photographs were taken and interpreted. These types of artifacts were collected throughout the semester and analyzed using the techniques described in the data analysis section that follows.

Data Analysis

Using a blend of Creswell (2007), Miles and Huberman (1994), and Stake (1995) data analysis strategies, data analysis began after the pre-interviews and first observations (Maxwell, 2013) using inductive reasoning (Lichtman, 2010) and an iterative (Tracy, 2013), reflexive (Denzin & Lincoln, 2011) analysis approach to capture the multiple realities that existed in each classroom (Lichtman, 2010). All data was continuously

organized and prepared throughout the study as well as periodically read in its entirety to maintain a cohesive sense of what was going on and to determine what new data needed to be collected. The overall principle for making sense of the data in a meaningful way, according to Stake (1995), was "through direct interpretation of the individual instance and through aggregation of instances until something can be said about them as a class" (p.74). For the purposes of this case study research, the aggregation of instances took place for each of the three exemplary economic teacher participants as individual cases as well as across all three cases collectively by identifying emerging patterns and themes in order to create a description of the PCK held and demonstrated by exemplary economic teachers.

Qualitative inquiry inherently requires collecting data for the purposes of interpreting the meaning behind human experiences (Denzin & Lincoln, 2011), which often results in multiple, even contradictory, interpretations (Schram, 2006). Therefore, it is critical that interpretivist researchers collect enough data to provide a thick description (Geertz, 1973) from which the researcher and future readers of the study's findings can make sense of data collected in a meaningful way. The first way I made meaning of the data was by creating initial coding from observation, interview, and artifact data to form descriptive and interpretive codes that were eventually collapsed into categories and then themes. A variation of the constant comparison method (Glaser, 1978) was used to modify and create new codes and themes for within-participant and across-participant patterns throughout the analysis phase of the study, guided by the research questions designed to have implications on teaching economics at the secondary and postsecondary

level. Using NVIVO 10 qualitative analysis software, final codes and themes within and across cases were developed to facilitate sense making of the data and to devise assertions. Midway through the data collection for each teacher in preparation for the mid-interview, I informally compiled primary themes, impressions, speculations, alternative explanations, outliers, comparisons to other findings in the literature, and new data collection strategies as needed (Miles & Huberman, 1994).

Further, cross-case analyses aggregated the data from all three cases into common themes representative of PCK collectively. Triangulation of data from classroom observations, teacher interviews, teacher questionnaires, student pre/post-surveys and tests, and teacher and student artifacts strengthened the internal validity of the findings that reoccurred within and across the cases over the entire span of the first semester; conflicting data that disconfirmed the findings were also intentionally sought and assertions about personal orientations and PCK revised accordingly (Stake, 1995). These assertions were made in the context of the research questions, theoretical framework, and PCK and economic literature bases. While I made my own personal assertions about the significance of the data collected, this final report includes enough raw data and thick description that readers will hopefully generate their own naturalistic generalizations according to their shared and vicarious experiences with the data based on analogous contexts (Stake, 1995). The data analysis goals of this study were best summed up by Shulman (1987) when he stated,

> As we organize and interpret such data, we attempt to infer principles of good practice that can serve as useful guidelines for efforts of educational reform. We

> attempt to keep the accounts highly contextualized, especially with respect to the content-specificity of the pedagogical strategies employed. In this manner we contribute to the documentation of good practice as a significant source for teaching standards. We also attempt to lay a foundation for a scholarly literature that records the details and rationales for specific pedagogical practice—the potentially codifiable knowledge that can be gleaned from the wisdom of practice is extensive.

In other words, making sense of the data collected from three award-winning economic teachers provided a sample of instructional practices from which other economic teachers, teacher educators, and curriculum writers might learn.

Validity and Ethics

Researcher reflexivity is the process by which researchers remain intimately aware of how their own values, expectations, and biases have the potential to strengthen and weaken the study throughout the entire research process (Tracy, 2010). Researcher bias is unavoidable simply based on the fact that the researcher exists in the social world he or she investigates and thus is not only changed by it but also exerts influence on it (Atkinson & Hammersley, 2007). That is, from an interpretivist epistemological viewpoint, meaning is constantly negotiated between the researcher and the participants and is never objective (Schram, 2006). While quantitative researchers argue such value-laden findings and interpretations lessen the contributions of the study, qualitative researchers claim that the nature of reality is in fact subjective thus producing constantly changing realities that can only exist from the perspectives of the people involved in the experience or phenomenon (Lincoln & Guba, 2000). Therefore, while researcher subjectivity is inescapable, and even virtuous according to some qualitative researchers

(Denzin & Lincoln, 2011; Maxwell, 2013), the validity of the findings, however, is generally increased through the standard practice of explicit self-disclosure of personal researcher biases and ethical dilemmas encountered as well as an awareness of how the entire research process is impacted consequentially (Peshkin, 1988; Stake, 1995). What follows, then, is a nuanced description of my personal and professional background as it informed and influenced this study.

As a high school teacher, I distinctly remember warning students that the upcoming unit on economics was going to be somewhat boring and that we would struggle through it together. Ironically, after resigning from high school teaching to earn a Master of Business Administration degree, I landed a job as an economic education professional development director for Grades K-12 in the surrounding school districts. It was during this time that I became familiar with a plethora of classroom-tested economic lessons that where designed to not only engage students but also give them the economic knowledge and skills needed for a more productive future as adult citizens. However, as director of the local Center for Economic Education referenced in this study from 2000-2010, I witnessed first-hand for ten years just how much Grades K-12 teachers, mainly social studies teachers, did not know about economics, even the most basic economic concepts. Important to note, most of these teachers had already completed at least one content course in economics as part of their teacher education programs in social studies education. Almost equally as troubling was their inability to implement active learning, interdisciplinary economic lessons that engaged students and convinced them that economics was supposed to be an empowering life skill, not just a collection of abstract

concepts unrelated to students' everyday lives and interests. Part of why students have historically failed basic economic achievement tests was becoming clearer, yet more troubling in light of a time in history when the economy was at the crux of political elections and a cornerstone of media reporting prior to the Great Recession of 2007-09. It was also during this time that I fell in love with economics and became passionate about what I hoped would be a life-long career of advocating for and teaching economics in a way that ultimately empowers people's lives.

Professionally speaking, my academic background and years of designing and modeling effective economic lessons—both as a professional development director and university instructor—gave me an advantage in this study in terms of recognizing accurate economic content, student misconceptions, and commonly used economic content examples and hands-on learning activities. Conversely, my years of economic education professional development and teaching experiences also made it difficult for me to take off my evaluator "glasses" when conducting this exploratory, qualitative study characterized by thick description rather than evaluation. Adhering tightly to my PCK theoretical framework was an important way to minimize this potential weakness, as was utilizing a rather detailed observation protocol. However, a certain degree of researcher bias always remains within qualitative research; therefore, in this study, my researcher bias may have influenced the data collected, particularly because the three exemplary teacher participants attended numerous professional development programs that I created and delivered over a five to ten year timeframe, which emphasized the use of active learning, interdisciplinary, and reasoning-based economic instruction.

To increase the overall validity of the data collected and subsequent conclusions drawn in this study, three guidelines outlined by Stake (1995) were followed: 1) "redefine issues, case boundaries, and renegotiate arrangements with hosts, as needed; 2) gather additional data, replicating or triangulating, to validate key observations; and, 3) review data, gather new data, and deliberately seek disconfirmation of findings" (p. 53). The internal validity of the naturalistic generalizations that follow were also strengthened by the selection of three teacher participants who had different personal and professional backgrounds (e.g., social studies versus CTE teachers) and whose students represented moderately different student demographics. Equally important, the internal validity of generalizations was reinforced by connecting the research findings and interpretations to the larger body of PCK and economic education literature.

In addition, several precautions were taken to minimize or eliminate the negative effects of potentially unethical research situations. First, I guarded against my own instructional biases (Peshkin, 1988) in terms of not jumping to premature conclusions based strictly on observation data without asking clarification questions during mid/post-interviews or informal side conversations to more accurately posit assertions. In addition to asking more pointed questions, I kept track of and worked out tensions and contradictions by reflective journaling (Chaudhry, 1997), practicing self-reflexivity (Tracy, 2010), and intentionally searching for rival hypotheses (Maxwell, 2013). Second, unethical research practices were minimized in participant selection because I relied on a third party (i.e., the current director of the Center for Economic Education) to nominate participants who had recently won the Outstanding Economic Educator Award. Third, I

obtained informed consent from each of my participants by fully disclosing my research questions and by establishing my researcher role with reminders that I was not there to judge or evaluate the teachers according to a predetermined set of standards. Rather, I was there to document effective economic instructional practices. This hopefully reduced the participants' researcher reactivity (Maxwell, 2013) in which they might have purposely distorted their natural instructional practices and interview responses to better fit what they knew or thought to be my research agenda. This means that when I observed teacher instructional practices that were traditional and teacher-centered, I tried to suspend judging them as ineffective and asked the teacher during an interview or hallway conversation why she decided to use that particular instructional practice. In other words, I reminded myself that I do not know at all times what instructional practices were needed for a particular group of students, especially when the students were not my own.

Fourth, I maintained ethical qualitative research practices in the representation and writing phases of the study by focusing on reporting what instructional practices were used and by avoiding the use of a predominantly deficit-based lens when suggesting how these practices might prepare students for citizenship. I considered the benefits of the instructional practices from as many angles as possible. For example, if the teacher lectured on a particular concept, I took into consideration the need to have background knowledge before economic content applications could be made. Fifth, the unethical dilemma that might have arisen simply as a function of my inexperience with conducting research was likely offset, at least partially, by the emergent design of case study research

methodology. This methodology allows the researcher to engage in a genuinely interactive approach whereby the researcher is free to revise the research design according to unexpected data that is collected in highly nuanced, complex, and unpredictable environments (Maxwell. 2013; Wells et al., 1995). See Table 5 for a validity matrix, detailing the most important potential threats to the validity of this qualitative case study's conclusions and the proactive strategies that were consequently integrated throughout the research process. Lastly, all identifiable places and people were given pseudonyms to protect the confidentiality of the data in accordance with the Institutional Review Board guidelines for the protection and ethical treatment of human subjects.

Table 5

Validity Matrix

1. Purpose of Study	*2. Data Collection*	*3. Data Analysis*	*4. Validity Threats*	*5. Validity Threat Strategies*	*6. Strategy Rationale*
Overarching Research Question: *What are the qualities of effective pedagogical content knowledge (PCK) in secondary economic instruction?*	- Classroom observation field notes (Glesne, 2011) - Researcher memos (Merriam, 2002)	- Coding, categories, themes, variation of constant comparison method (Glaser, 1978; Miles & Huberman, 1994) - Compare to teacher interview responses - Within-case and cross-case analyses (Stake, 1995)	- Researcher bias, invalid data, and unethical practices: drawing potentially invalid conclusions based on my preconceived theories of what counts as effective economic instruction (Atkinson & Hammersley, 2007)	- Long-term involvement (Maxwell, 2013; Merriam, 2002) and data saturation (Glaser, 1978) to reduce premature conclusions - Rich data: detailed descriptions to reveal full picture of what is going on instructionally; thick description (Geertz, 1973) - Intentionally look for application of lectured concepts in subsequent activities, including activities that occur days later - Carefully observe small group and whole group discussions that reveal evidence of student learning; look for discrepant cases (Stake, 1995)	- To not only focus on the instructional process but also to pay attention to learning outcomes, which can be achieved by different instructional practices - Serves as a reminder that some traditional instruction is necessary

(table continues)

Table 5 (*continued*)

Overarching Research Question: *What are the qualities of effective pedagogical content knowledge (PCK) in secondary economic instruction?*	- Semi-structured teacher interview responses (Schensul, et al., 1999)	- Transcribe - Coding, categories, themes, variation of constant comparison method (Glaser, 1978; Miles & Huberman, 1994) - Compare to classroom observation field notes - Within-case and cross-case analyses (Stake, 1995)	- Researcher reactivity: teachers may change instructional practices/ interview responses based on my research interests and thus not accurately reflect their typical practices/views (Maxwell, 2013)	- Respondent validation: ask teachers for feedback about my data and conclusions (Maxwell, 2013) - Multivocality: understanding three teachers in different settings (Tracy, 2010) - Triangulation: using teacher interview responses and observation field notes to provide evidence for the various instructional practices implemented (Stake, 1995) - Open-ended, non-leading interview questions (Patton, 2002) - Practice self-reflexivity during the entire research process (Tracy, 2010)	- To reduce misinterpretations and identify biases - To enhance credibility with multiple voices - To reduce self-report bias and provide evidence that practices were thoughtfully and intentionally selected for a particular purpose - To allow teachers to discuss topics I might not have thought of or give opinions contrary to my own - To constantly be aware of how my biases are shaping the study

Summary of Methods

The purpose of this study was to better understand the personal orientations toward economics and the nuanced qualities of effective instructional practices used by three award-winning secondary economic teachers guided by a PCK theoretical framework. Thus, qualitative methods were especially useful in constructing multiple meanings of the types of knowledge and skills these teachers held and demonstrated, collectively and as individual cases, by triangulating the data collected from classroom observations, teacher interviews, teacher questionnaires, student pre/post-surveys and tests, and teacher and student artifacts. Guided by the study's research questions, the thick descriptions and naturalistic generalizations that resulted from the analyses and interpretations of the data collected hopefully amplified the voices of the teacher

participants in hopes of informing the phenomenon of teaching economics in relation to the PCK and economic education literature.

CHAPTER IV

FINDINGS

Personal Teacher Orientations

Valuable Life and Professional Experiences

Each of the teachers had slightly different past experiences that helped them prepare to teach economics at the high school level. However, all three of them claimed that they were highly effective economic teachers in large part due to their attendance at numerous professional development programs that taught economic content by modeling effective instructional practices unique to the discipline of economics—that is, modeling pedagogical content knowledge (PCK) in economics. Beyond professional development programs, Ms. Miller pointed to her business ownership experiences before becoming a teacher, as well as living in poverty and "getting into financial trouble" early in her adult life. She was convinced that these "negative life experiences…have prepared me more because I can literally say, 'Don't do this' or 'I can tell you from experience, you don't want to do this.'" Taking the initiative to locate quality curriculum resources from a variety of sources also played a major role in her preparation to teach the course. These instructional sources included the local Center for Economic Education, the state department of education, local banks, the Federal Reserve System, professional

conferences, and simply talking with other economic teachers: "I've got some of the best ideas that I've ever had just from conversations with other teachers." According to Ms. Miller, finding economic curriculum resources was the easy the part; "narrowing them down to a workable amount" was the hard part.

Ms. Levitt attributed her success as an economic teacher in part to having taught an economics and personal finance elective course to sixth grade students at the nearby middle school for almost nine years. In addition to "taking every offered workshop or professional development course that [she] could that's related to economics," she spent many hours studying and exploring the economic content on her own. Specifically, she said,

> I think that the more you can get, the more you develop yourself. I think you have to study. You have to study before you teach it. I still study before I teach it. I mean, every time I study, I learn something new and something clicks for me. An example will come to me that makes it easier for me to teach. So I would say, use every available resource, study on your own, and dig deeper. Ask people questions, and I would say, try to get with teachers who have experience teaching [economics] and pick their brains about what works for them. So use them as a resource.

Ms. Williams associated her economic instructional success first to her years of attending professional development programs in economic education and second to her age and stage in life, especially when she compared herself to a "colleague who is very young and [who] I think is not bringing the same things to the table" in terms of professional development and life experiences.

Disciplinary Background

Career and technical education (CTE) versus social studies education. The state department of education mandated that the economic course can be taught by CTE teachers, social studies teachers, and mathematic teachers at the discretion of each school district. Neither of the two districts in this study opted for mathematic teachers to teach the course. Ms. Miller, a CTE teacher who had earned a bachelor's degree in business education and a master's degree in vocational and technical education, was the only teacher at her high school who taught the economic course during this study. Ms. Levitt, a social studies teacher who had earned a bachelor's degree in history with a secondary teaching endorsement, was one of two social studies teachers at her high school who taught the economic course. Having earned a bachelor and master's degree in business before becoming licensed to teach at the secondary level, Ms. Williams was one of three CTE teachers at her high school who taught the economic course. While the state Economic and Personal Finance (EPF) standards are written in a format similar to the standards written for other social studies courses, two different state curriculum frameworks exist for CTE and social studies teachers. As a result, Ms. Miller and Ms. Levitt's school district combined the two documents and created a crosswalk by matching the CTE competencies with the state standards since they were mostly similar. Despite being CTE teachers, Ms. Williams and her colleagues decided to just use the state standards.

When asked which teacher—CTE or social studies—was best qualified to teach economics, all three teachers admitted to not being able to separate from their biases yet

believed that the two disciplinary backgrounds impacted how the course was taught. Ms. Levitt was convinced that she and her social studies peers were better suited to teaching the economic course based on their background training in using resources beyond textbooks. She reflected,

> When history came in and started teaching these classes, we had resources we knew how to use. We knew how to pull resources because we'd been trained to do that. [CTE teachers] were given a textbook, and they mostly didn't use another resource. So with us, we had to dig and find things.

Ms. Levitt felt that CTE teachers were trained to not deviate from a textbook, and "they would start at the front part and they have to work to the back part" in business classes like keyboarding and computer applications. She added that these types of classes only required direct instruction from the textbook, followed by students independently completing assignments at their computers. Nevertheless, she did give Ms. Miller credit for trying to incorporate more hands-on activities, which she had been known to share at their professional learning community (PLC) meetings. Moreover, she thought social studies teachers were a better fit because they were accustomed to meeting state standards for year-end testing purposes, whereas CTE teachers approached satisfying their competency requirements using completely different instructional practices. When asked to transfer from the middle school to the high school to teach the economic course, Ms. Levitt told her principal that she definitely wanted to remain part of the social studies department instead of the CTE department because of the differences in instructional expectations. She also knew that the high school social studies department received

professional development training on various teaching strategies throughout the year to which the CTE teachers were not invited.

Ms. Miller identified a similar shortcoming with regard to the instructional practices used by social studies teachers. She thought that because social studies teachers were evaluated by their year-end test scores unlike CTE teachers, they were more likely to strictly adhere to a "teach to the test" mentality and thus made less time for hands-on activities and necessary remediation. Beyond differences in instructional practices, both Ms. Miller and Ms. Williams believed that economics had far more content applications to business than history and geography, for example. Consequently, Ms. Miller was concerned that social studies teachers were tempted to emphasis the personal finance content of the course due to their limited economic knowledge. Similarly, Ms. Williams opined,

> History is important and we need to learn from the past so we don't make our mistakes again, but I feel like we have to be living in the current day. So, you need someone to tie [economics] into what's going on now…and how it's affecting you.

Additionally, both teachers thought the "doing" nature of CTE workplace readiness competencies was better suited for an economic life-skills class as opposed to social studies standards that they thought tended to be of a more conceptual nature.

Besides instructional and content differences, Ms. Miller also suggested that the discord between CTE and social studies teachers in her school district stemmed in part from the newness of the merger between the two departments for the sake of the

economic course. She used the analogy of when her school merged with the middle school. Differences were more pronounced among the students until everyone who was from one school or the other graduated. Regardless, all three teachers acknowledged that their disciplinary background greatly impacted how they taught the course. "I'm always going to approach it from a business perspective because that's my comfort zone," said Ms. Miller. "We want to make it applicable to what we know best. That's what everybody does with everything, isn't it?" added Ms. Williams.

Political Leanings

Political affiliations, news sources, and voting issues. When asked how she would describe her own political affiliations and opinions, Ms. Levitt and Ms. Miller identified as moderates with Ms. Levitt leaning towards conservative fiscal policies and Ms. Miller staying true to some of her previous liberal fiscal beliefs. With regard to where she got her news about current events and the economy, Ms. Levitt said that she consults multiple sources such as the local paper and local television channels followed by national and global news sources. She intentionally checked three particular sources—CNN, Fox News, and MSNBC—because they all present a different viewpoint. Occasionally, she also included BBC if she needed more international news. Less discriminate, Ms. Miller stayed up to date with local television and radio channels and sometimes the Internet by just Googling economic news or current events that she heard were happening. Specific channels beyond the local news channel were not mentioned. Unequivocally, Ms. Williams identified as a conservative and said Fox News was the

media source from which she got most of her news about current events and the economy.

In terms of their most important issues when voting in an election, whether economics-related or not, Ms. Levitt and Ms. Miller steered towards mostly fiscal issues while Ms. Williams included both fiscal and social issues. Specifically, Ms. Levitt shared,

> I almost always vote based on economic issues—for sure taxes. When I'm looking at the person, I don't look at the party. I look at the person and what their platform is. What are they standing for? Do they want to grow the government or do they want to grow business? I'm voting on if they want to do something for business, not for the government. I want less regulation, less government involvement…Then I'm also looking at what do these people want to do socially as far as education.

Ms. Levitt concluded by saying that she does not vote based on her personal opinions about other social issues, which she thought was irresponsible voter behavior.

Also addressing voter responsibility, Ms. Miller insisted that voters are obligated to "swim through all the bull" before casting their votes, but she feared "too many people vote Democrat or Republican but have no idea what they're voting for. Some people just vote for the donkey or the elephant." As for specific voting issues, she was most interested in the political candidates' stand on education and the economy, as it related to her stage in life. For example, only four years away from retirement, she was most interested in what the candidates proposed they will do about Social Security and Medicare. Ms. Miller advised her students to also vote for candidates that best meet their life stage needs, such as first-time home mortgages and college tuition assistance. After

being asked for the issues she most often considered when voting, Ms. Williams was most interested in how government policies impacted her and her husband, both of whom were state employees, as well as the healthcare system. She closed by saying, "I also look for someone with some conservative values. We can't continue with the anything goes [mentality]. There's got to be some parameters."

Course Beliefs

Graduation requirement and administrative support. Without hesitation, the teachers agreed that all high school students should be required to take a whole semester of economics before graduating. Ms. Williams' main reason was because an economic course "is preparing them for the future, and a lot of kids won't ever take another economic class, but I think they need some foundation." Going a step further, Ms. Miller exclaimed that she thought "they should take a whole year of it, not just a semester! I actually think it's providing building blocks that they can use for the rest of their life." More specifically, Ms. Levitt said,

> I think it's going to make them think about what they are doing and think about the choices they are making. It helps them become better citizens and understand how our economy, our government, and our world work. Everything is so connected. I think we have to send people out that have an understanding of how it all works. Then you have a stronger community, you have a stronger government, and you have a stronger country.

All three teachers verbally shared with their students the importance of taking a high school economic course, but Ms. Levitt did so most frequently during my classroom observations. For example, on a day when she knew her macroeconomic lesson about

gross domestic product, *inflation (GDP)*, and *unemployment* would first appear unrelated to students' lives, she elevated her voice and almost shouted, "Rise and shine! Just like breakfast is the most important meal of the day, economics is the most important class of the day, and I'm going to show you why today." Another illustrative example occurred after students failed to turn in their homework at the beginning of class, and Ms. Levitt lectured the students about the negative consequences of not completing assignments:

> You're making your own choices in here. [Economics] is all about choices. This is not an elective class. This is a required class for graduation, and it's truly the only class you will take that you will really need. You need to know everything in this class!

Even though Ms. Levitt held a sincere belief in the importance of the course, she was frustrated with her school district for calling it a "required elective," a label she thought was an oxymoron and equated to administrators, guidance counselors, and students taking the course less seriously than other required core courses like government. However, despite being in the same school district and same economic PLC, Ms. Miller expressed the opposite opinion about administrators' support of the course by saying,

> [Central office] has never stopped me from taking any course I wanted to take. Any conference or workshop I wanted to attend was fine with them. They have given money out for things I wanted to buy for the economic classes, and you know you put your money where you feel it's important.

Similarly, Ms. Williams believed that her administration found value in the economic course because she, too, had received money to buy supplemental curriculum resources almost every time she asked.

Preparation for adult and citizen roles. The teachers unanimously agreed that students who took a semester economic course were better prepared for adulthood and citizenship after graduation. When asked about specific adult and citizen roles in which students might need to use their newfound economic knowledge and skills, Ms. Levitt started by saying,

> Oh, in every single area of their life! Every single day you make hundreds of choices, from the time you open your eyes to the time you close your eyes, and every one of them is economically related. So everything is attached to economics, and there is no separating it at all. So I think it affects every area of their life.

When pressed to be more specific, Ms. Levitt used the benefits of teaching students to use the PACED decision making model and the economic way of thinking (EWT) as examples. She explained that when students leave her economic class,

> They have an understanding of how to weigh their decisions before they make them, and they have a much better understanding of what happens when they make the decisions. So there are always consequences, whether they are intended or unintended consequences. There's always going to be a consequence to their decision. I think they have a much better understanding of that and how it impacts them.

Ms. Miller offered similar examples wherein students were able to make better decisions by considering their *opportunity costs* when it came to choosing the type of car to buy or where to live and go to college, for example. Adding *supply* and *demand* into the mix, Ms. Miller said that her students' understanding of *scarcity* and the *tragedy of the commons* made her students better citizens by taking more informed care of the

planet. Moreover, by her students understanding the role of government in the economy, she hoped her students would better understand their citizenship responsibilities to the government, including paying taxes.

Beyond her own personal life, Ms. Levitt also believed her students gained a better understanding of how the world worked through her economic instruction. She claimed,

> They're not just sitting and hearing this is this government and this is this government. It's real life. This is how it works with economics, and this is how it's going to personally affect you. So I think they're better able to understand the world around them because they took this class. I have kids who never listened to the news who will come in and ask me if I saw something on the news because I stress news, and I stress current events. So I think they become more aware, and they become more involved because of that.

Ms. Williams believed her students were in a better position to cast informed votes at the local, state, and national level as a result of her election activities and discussions, which required students to analyze what the candidates proposed they would do for the people if elected. Ms. Williams also said she always strived to help students,

> Understand how their voting decisions affect the economy and might affect their employment opportunities, home purchases, or the power of their money. How the right or wrong person in office or the right or wrong political candidate's platform could trickle back into their pockets.

Because Ms. Williams and her students lived in a town that had recently experienced several business closings, Ms. Williams felt her students would be more motivated to spend money in their local economy after she helped them understand the impact of

investing locally on business profits and entry-level employment opportunities for high school students.

Combined course format. The two school districts that participated in this study opted to combine the economics and personal finance semester courses into a yearlong course to meet the state graduation requirements. Neither school district offered Advanced Placement (AP) economics, so the yearlong course was a regular course taught to all students along the continuum of student ability levels. While all three teachers agreed that their students would benefit from dividing the course into basic and advanced sections, the combined yearlong course format—that is, economics plus personal finance—was a source of slight disagreement among the teachers.

When asked about her preferences regarding a separate versus an integrated approach to the economics semester course, Ms. Williams was the teacher most in favor of combining the economic content with the personal finance content on a consistent basis throughout the entire year. She believed this combined course format naturally made the economic content relevant to more students, thus better accomplishing the state's goal in making all students more economically literate citizens. Referring to the yearlong combined course format, Ms. Williams stated,

> I like it together because I think economics scares people, and I think with it tied to the personal finance, you can show how the two are intertwined, especially because it's a graduation requirement. I think that if there was going to be a second level to this course, that could be a stand-alone course, but I think as a graduation requirement, it's good for it to be together.

Ms. Williams, however, had a problem with the state combining the economics standards with the personal finance standards into one document because it "…makes it easier for people to teach what they want to teach," referring to teachers who do not have an adequate economics disciplinary background who consequently focus more on personal finance.

Ms. Levitt also agreed with the yearlong combined course format, but she thought that spending the first part of the year just teaching economics was the best integration approach. She stated,

> We have to spend the first [several months] laying down the foundation for the economic concepts and then you cross over into personal finance. So that way you're referring back over and over to those economic concepts that they have to know and be able to understand. That seems to be the best way, so we're a yearlong course here.

Having the opportunity to revisit the economic concepts throughout remainder of the year was important to Ms. Levitt, as a means of ingraining economics into students' everyday language and thinking processes.

In an ideal world, Ms. Miller would prefer teaching a yearlong course of economics and a separate yearlong course of personal finance, in which both courses would use content examples from the other because "…there's no way I can teach economics without personal finance, and I can't teach personal finance without talking about economics." However, the current yearlong combined course format was problematic for Ms. Miller in the following way:

> I feel like by combining the two courses, you're short changing both of them because you end up having to pick and choose. I have to pick and choose out of personal finance what is important and that I want to hit, and I have to pick and choose out of economics what I want to hit.

Not having time to cover all the economic content, including the amount of instructional repetition some economic content required, was a disservice to both lower and higher achieving students, according to Ms. Miller. Inadequate economic content coverage was also a hindrance to Ms. Miller's interests in preparing her students to participate in co-curricular economic statewide competitions such as the Stock Market Game™ and the Governor's Challenge in Economics and Personal Finance. Despite the varying opinions about the combined yearlong course format, all three teachers admitted to feeling pressure to cover the personal finance content early enough in the school year to make sure the students were prepared to take the WI$E Financial Literacy Certification test (WI$E test) administered in late April. This test satisfied the state's requirement that students who received a standard diploma had to earn certification in a CTE program by passing an examination.

Basic and advanced course sections. Unlike the combined course format, all three teachers adamantly agreed about the need for the economic portion of the course to be geared toward two different student ability levels—basic and advanced. However, because only one general-level course section was currently offered at all three schools, the teachers attempted to teach somewhere in between their range of student ability levels to meet the needs of the greatest number of students. When forced to compromise, all three teachers catered their instruction to the lower achieving, non-college bound students

who perhaps might not have another opportunity to learn about economics as a life skill. In doing so, they believed that the course was on average either too hard for their lower level students or too easy for their higher level students.

Stating her reasons for offering two sections of the economic course in the future based on student ability levels, Ms. Miller said,

> Right now in my class I have such a diverse group of abilities. I have one group of students—this is not in any way belittling them—but they have no need for advanced economic skills whatsoever. They are not going to use it ever. They're not going to go to college. They need to know…just the basics of economics: *supply* and *demand*, *needs* and *wants*, those types of things.

Ms. Miller went on to share her experiences with teaching her first economic class four years ago to predominantly advanced 12th grade students, most of whom were enrolled in multiple AP classes. The freedom to include more theoretical, college-preparatory economic content in this more advanced economic course conjured up fond memories for Ms. Miller. Several of the students who took the course either emailed or visited her to say that their first economic course in college was easy for them because they had already learned much of the content in their high school economic course with her.

Ms. Williams, also a strong believer of offering a basic and advanced economic course suggested,

> The whole reason that this course needs to be a graduation requirement is because you're going to be a better citizen if you have some economic knowledge, but everybody's not bringing the same information to the table. Everybody doesn't need the same foundation to move forward to college. If we could personalize [the economic content] and it benefit you…was really the whole mandate that the state was behind by this being a graduation requirement. Why are we not caring

> about making it applicable and giving you the best that we can? We divide English classes. We divide history classes. We divide math classes. Now [the economic course] is a graduation requirement. Why don't we want to divide it, so that you're getting the most that we can offer you?

Appearing frustrated, Ms. Williams was quick to point out that her school was offering a section of AP Psychology this year that currently only had six students enrolled. Ms. Levitt echoed similar sentiments regarding the need for two separate economic courses as Ms. Williams and Ms. Miller expressed and also emphasized the need to weight the advanced course like an honors course or AP course where students could earn college credit.

Speculating about the how the two course sections (i.e., basic and advanced) would differ instructionally, the teachers agreed that the basic economic course essentially should be a life-skills class for non-college bound students while the advanced economic course would be a more theoretical course preparing students for their first college-level economic course. Both courses, however, should be taught to 11th and 12th grade students, if possible, since the majority of economic content becomes more relevant to students' lives as they grow older and naturally have more life experiences to which to relate the economic content. Under the two course scenario and within an already overcrowded high school curriculum, the teachers agreed that the basic course should remain a yearlong combined course format, culminating with the WI$E test, and the advanced course should be reduced to a separate semester of strictly economic content with the option to take the AP economics exam.

When asked about the differences in economic reasoning instruction, the teachers generally agreed that exposure to all the tools was necessary in both classes—cost-benefit analysis, PACED decision making model, supply and demand graphs, the EWT, and production possibilities frontier. However, the basic course should include more time to practice applying the tools to personal and real-world situations involving level lower levels of analysis. Ms. Miller thought this was especially important because many of her lower achieving students already struggled with basic mathematics which made supply and demand and production possibilities frontier graph manipulations even harder to understand conceptually. Upon further reflection during the post-interview, Ms. Williams suggested that all students, regardless of ability levels, should still have to take the basic course or at least test out of the course to ensure that the students had the real-world knowledge and skills emphasized in the basic course. Otherwise, she feared that the advanced students might miss out on learning valuable economic reasoning skills emphasized in the basic course which are "…so vital to their personal success in the future," thus defeating the primary reason the state mandated the course for all high schools students in the first place—that is, in order to develop a more economically literate citizenry. Ms. Williams concluded by reminding me that such prerequisite coursework is not a new idea in secondary schools. For example, students have to take physical education in 9th and 10th grade before they can take strength training in 11th grade.

Online course component. Students at all three high schools who could not fit the economics and personal finance yearlong course into their schedules could elect to

complete the entire course online during the summer or school year using Virtual Virginia, the state department of education's virtual hub for various online courses. The state also required all high school students to satisfy one online course requirement for graduation. Both school districts in which the teachers were employed decided to add this online course requirement to the economics and personal finance course. In fact, this was the second year that the economics and personal finance course now satisfied three new state graduation requirements including the yearlong economics and personal finance course, the completion of one online or blended course, and certification in one vocational program for standard diploma recipients (i.e., the WI$E test). The online course did not need to be a full course but rather only a portion of a regular course, as was the case with the teachers in this study.

Ms. Levitt and Ms. Miller estimated that they only used the Virtual Virginia online course modules for about 10 percent of their overall instructional time as just one of many classroom resources since the state had not set any minimum usage amounts. Both teachers thought Virtual Virginia was helpful to students when it was used to reinforce content already covered in class, especially since the online course featured both economics and personal finance content in preparation for the WI$E test. However, when asked for a more candid opinion about the instructional value of the online course, Ms. Miller was less positive than Ms. Levitt. Ms. Miller called it a "necessary evil" since secondary and post-secondary education was moving more towards online learning, which in her school district was partially due to the shortage of qualified teachers. She added that many of her students, despite being technologically savvy, complained about

having to learn by themselves on the computer. Summing up her stance on the required online component of her course, Ms. Miller added,

> I think it's good for maybe small things. I think it is a tool, but it should only be one tool, no more than the whiteboard or a book or the LCD projector or anything else that you use to deliver information. But it shouldn't be the end all of anything…I hate the idea of someone taking economics by just sitting in front of a computer.

One of Ms. Miller's specific complaints about Virtual Virginia was the ease with which students could cheat on the quizzes by taking them multiple times and simply remembering the answers.

On the other hand, Ms. Levitt, who was required to also use Virtual Virginia, had a more favorable view toward the online program and, to some degree, she thought it was true to the objectives listed on the course homepage: "…[to] develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem solving." Ms. Levitt essentially thought the online program was,

> What you make of it. If I just put my students on there, they're going to just click, click, click, and go through it…so, I make them take notes. Sometimes I will do some kind of reading strategy note sheet where they have to induce certain things with the information that they are reading. I might also have some activity they have to do with the module.

Although, like Ms. Miller, Ms. Levitt concluded that she was opposed to using the online program all the time because "contrary to popular belief, my kids don't like to sit on the computer every day and do something. They like the interaction with me, and they like the interaction in the classroom."

The online course component in Ms. Williams' school district started three years ago as a computer lab experiment where the entire economics and personal finance yearlong course was supposed to be an online course. Teachers or aides were simply present in the labs to supervise the students, or "babysit" as Ms. Williams put it. Only a few teachers who were passionate about the course content actually incorporated face-to-face instruction, albeit on an infrequent basis. However, the school district quickly realized from student and teacher feedback that the entirely online course format was mostly ineffective in terms of student learning, as the "talking head video" offered no interaction with students. This year was the first year that the course was a true blended course, which the school district defined as 50 percent face-to-face instruction and 50 percent online instruction using curriculum created by Edgenuity, a private company of blended learning courses and environments for high school students. Ms. Williams estimated that she only used the online program about 25-40 percent of the time because she believed the online program did not produce the intended learning outcomes. She expressed her concerns as follows:

> [Students are] bringing so many knowledge bases to the table, and I don't really think economics is friendly learning material out of the gate. I think you can make it friendly and you can make it appealing, but…you have to teach people to love economics or to take ownership of it. You can't do that interacting with just a computer screen.

Despite her strong critiques of Edgenuity, she did agree with the other two teachers about the need to expose high school students to online learning since it appeared to be an educational trend that was here to stay. Adding the online course component during the

second semester made more sense to Ms. Williams, but in the first semester, she believed "…you need to be creating an understanding and an enthusiasm for [economics]." However, all three teachers clearly preferred that the state's online course requirement be tacked onto another course that was less skills-based and required less active learning instruction.

Instructional Goals

General teaching philosophy and instructional style. Each teacher had a slightly different response when asked about her general teaching philosophy, unrelated to the economic course, in terms of how to best help students learn. Ms. Miller's emphasis was on keeping students accountable for their own learning, while Ms. Levitt focused on building relationships with her students and Ms. Williams stressed the importance of making the content relevant to students' lives. Referring to herself as "old school," Ms. Miller began describing her teaching philosophy by expressing concern about the current trends in education requiring teachers to become facilitators of "learning that kinda evolves and comes around on its own." After nearly 24 years of teaching, she firmly believed that most students still needed one-on-one interaction with teachers on a regularly basis, as well as direct instruction. The assessment leniency that she had witnessed at her own school where students were able to retake tests multiple times caused her perhaps the most concern, which she believed was ultimately taking accountability away from students.

After acknowledging the many different learning styles present in any one class, Ms. Miller said it was her "responsibility to teach by putting the information out there in

as many ways as I can." However, she felt that students were no longer being taught important life lessons of personal responsibility that they would need as adults such as, "If I don't work hard, I'm not going to get ahead. If I don't prepare, I'm not going to pass this test. If I don't do this work that is expected of me, there are consequences for those actions." Referring to her instructional style as "a combination of teacher-centered and student-centered," Ms. Miller elaborated,

> My teaching style is to try to be as varied as possible and use as many different types of methods and instruction as possible. But there are still going to be days that there are going to be lectures, and there are going to be days that it's going to be fun. But it can't all be fun days because you have to know something before you can play games.

A self-professed "social butterfly," Ms. Levitt summed up her teaching philosophy by saying, "The most important thing for teachers to do is to love kids." She believed her teaching effectiveness was a direct function of her relationships with her students, so she consequently invested considerable time and effort into getting to know her students on a personal level. She concluded,

> I don't think that they're going to care about what I'm teaching or really get it if they don't feel that I care about them. So my philosophy really is building relationships with them first and then really teaching them what they need to know, and then lead by example.

When asked about her instructional style, Ms. Levitt said, "I run my classroom like my family." Maintaining a flexible, relaxed, and inviting classroom environment was important to Ms. Levitt because she thought it facilitated "a lot of open

communication…where we're bouncing [ideas] off each other." More specifically, Ms. Levitt incorporated current events into her instruction several times a week and hands-on activities that students completed individually or collaboratively. Lecturing and note-taking bored both Ms. Levitt and her students.

Ms. Williams' teaching philosophy was also focused on her students, but less about cultivating personal relationships and more about making personal content connections. She believed the most important way for teachers to be effective was to "teach them things that are going to be valuable to them. If a student doesn't think it has any worth, they're not very likely to want to learn it." Underscoring the importance of personalized learning, Ms. Williams thought "each student needs to have choices and [opportunities] to work at their own pace…to be responsible and disciplined." Because of block scheduling, she also tried to "do some hands-on instruction, some activity, maybe some Internet research, then back to some discussion. It's got to be like a 15, 15, 15, 15 [minute] model." As someone who was heavily involved in her local community, Ms. Williams described her primary instructional style as follows:

> My absolute favorite thing is for [students] to bring in something from the community and then us tie it back to economics, no matter what is going on. Whatever current event is happening, whether it's a bank opening or closing or car wreck…I like for them to see how whatever they can throw out, how we can tie it back to economics.

Economic instructional practices. During the pre-interview, teachers were asked to describe their instructional practices when teaching economics, particularly which instructional practices they used most and whether they favored teacher-centered

or student-centered practices. All three teachers believed that regularly incorporating hands-on, activity-based learning opportunities for students was critical to the success of their economic instructional practices. For Ms. Levitt, cooperative learning was especially important for students when learning difficult economic concepts because "the more they talk, the more they can understand" and because she is not "necessarily looking for the right answer but looking at the process of getting them there." For example, when students used economic reasoning tools such as cost-benefit analysis and the PACED decision making model, their final decisions could not be evaluated in terms of simple notions of correct or incorrect answers but rather in terms of the degree to which their thinking processes, which were made explicit by using the tools, supported their final decisions.

Ms. Miller, who admitted to being a "control freak when it comes to the classroom," said that she started her economic units with a lecture to "get all the major information out there and then build on that foundation with activities." New economic concepts, according to Ms. Miller, required about half the class to be teacher-centered and the other half of the class to be student-centered. While not a proponent of lecturing the entire 50 minute period, Ms. Miller said it was unavoidable on rare occasions. By lecture, though, she believed that teachers "have to hit more of the senses other than just hearing it." That is, students should see the economic content in their textbook or when she wrote on the board, and they should write the economic content in their notebooks. Lectures were also broken up with worksheets that required students to critically think about the economic content or apply it to personal and novel scenarios.

Less concerned with lecturing and activities, Ms. Williams thought economics was best taught by having students read and discuss articles about the local, state, and national current events. In theory, Ms. Williams thought about 25 percent of the class should be devoted to other student-centered, hands-on activities, but she admitted that she only included such instructional practices about 10 percent of the time due to the financially costly and time consuming nature of activity-based learning. The three economic teachers at Ms. Williams' school had to share $200 during the entire school year for instructional supplies. However, Ms. Williams believed that as long as she changed her instructional practices about every 15 minutes, her students would be successful in learning economic content. Fifteen minute increments might include students reading an article, researching economic concepts online, answering prior knowledge questions, working on Edgenuity, and completing a worksheet. She did, although, agree with Ms. Miller about the need to sometimes lecture longer than 15 minutes when introducing difficult economic content.

Concept-based versus skills-based. The economic state standards divide economic content into concept-based and skills-based learning. Skills-based learning includes using economic reasoning tools to analyze choices of all types, including those featured in the daily news, particularly in terms of how those choices impact students' personal lives. The appropriate percentages of both knowledge types—concept-based and skills-based—are often debated among economic educators. However, all three teachers believed that for students to learn economics in a way that prepared them for their future, more instructional time should be spent teaching students how to use

economic reasoning tools and thus how the economic content applied to their everyday life rather than just teaching students economic concepts. Ms. Levitt explained her emphasis on economic skills-based learning by saying,

> I can teach them the definition of supply, the definition of demand, the definition of equilibrium, but if they don't understand what it looks like in everyday life, then that means nothing to them and they have simply memorized vocabulary.

Ms. Levitt also explained that after teaching the basic concepts and principles contained in the EWT, for example, she required students to apply the concepts and principles to their everyday lives and current events throughout the entire school year.

When asked what the ideal percentage of instructional time should be devoted to teaching both kinds of knowledge, Ms. Williams and Ms. Levitt estimated about a 25/75 split—25 percent of instructional time should be devoted to teaching economic concepts and 75 percent to teaching economic skills and applications. Ms. Williams justified her emphasis on skills-based instruction by saying,

> A lot of people think economics is boring, [which is what happens] if you belabor the concepts too much. If you're not doing more interactive activities or putting some of the thinking off on them, it's too instructor-led or 'sage on the stage' and you're losing them actually taking it personally, which means they're not going to take it to the life application stage.

Ms. Miller hesitated to offer a percentage breakdown because it was so heavily dependent upon the economic topic; however, she did say that teachers "need to do some type of application after you present a concept in order to lock it in and that just reinforces what you have been saying." This emphasis on skills-based applications, however, meant

teachers had less time to cover all of the economic concepts outlined in the state standards.

Favorite economic lessons. During the pre-interviews, I asked each teacher to walk me through one of their favorite economic lessons, which by and large was an accurate representation of how they described their economic instructional practices and what I observed in their classrooms. For example, staying true to her belief that students learned best in social settings where students processed economic content cooperatively, Ms. Levitt described her favorite lesson about *marginal thinking* as follows:

> I think that one of my best lessons is about thinking on the margin, where you "hire" someone to come work in your factory, and they trace left foot patterns to sell because that's what is in demand. You time them for 30 seconds to see how many they can make by themselves. Then you say we need to increase production, so I have to hire another person. So I hire another person and put them inside this little box [on the floor bounded by masking tape] together with the first worker and now they're both having to trace their foot. And I do quality control, or I'll get someone else to do QC [quality control] and they're checking whether the [traced foot patterns] are good enough or not. You're getting rid of some and you're counting others. We have a chart going of how many one person did, how many two people did, and so on. Then you keep adding workers, but the square is literally a small square, so you end up with nine kids in there, and they are standing on one leg while someone else is tracing their foot. You start to see that production goes down. So then I direct them to thinking on the margin: at what point does it become a cost to you rather than a benefit to you to have more employees? It's really good for them because they are actually involved and they're seeing a chart. They really get it. The light bulb comes on.

In keeping with her beliefs about bringing in current events happening in the community, Ms. Williams shared the following favorite lesson:

> The [town] bulletin has a weekly publication, and students have to find some article…to read and tell me what the economic issues are. It could be something

> as simple as the basketball game. Some guys always want to read sports. We will go around the room and everybody has to share the economic issue, and if they can't share it, then they need to at least summarize what they read and the rest of us have to recognize what the economic issue is because there is always an economic issue. Some jump out quicker than others. If you pick something like the war in Iraq, then how does that get back to you? So you have to tell me what's going on there. What is the economic impact and how does that apply to you, even if you don't have a military person in your family. It's real-world application. I feel like this is one of those things that is truly going to benefit them for life. How often do you necessarily need to recite the preamble to the Constitution? I remember doing that in 10th grade. We have to memorize it, and we have to stand up in front of the class, but really that is not going to serve you that often as an adult. But I feel like virtually everything we teach them in this class has a long term benefit.

More reliant on teacher-centered instruction, one of Ms. Miller's favorite introductory lessons was about *wants* and *needs* and *goods* and *services*:

> When the kids are walking through the door, I have Keith Richards or Mick Jagger blaring out, "You can't always get what you want"…So they are coming in asking, "Who is that?" So that's raising that question, and I make them sit here and actually listen to the song. So then we talk about what does [the singer] mean? And I'll have a handout that has the major terms and definitions, and then they get together and decide what goes with what. So we do that type of activity. And then when we get to talking about goods and services, we talk about what is a good. Give me some examples. Who wants to write on the board? There's always somebody dying to write on the board. So then they come up [to the board], and we're going to have goods here and services here and then they call out a bunch [of examples], and we list them.

Ranking instructional goals and practices. As part of the pre-interview questioning, teachers participated in a card sort activity in which they placed four goals for teaching secondary economics in order of importance and simultaneously discussed the rationale behind their rankings. Based on previous studies investigating economic

instructional goals at the secondary level (Highsmith, 1990; Schug, Dieterle, & Clark, 2009), the following four economic instructional goals were typed on four index cards:

- Forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters
- Developing an understanding of basic economic concepts, principles, and the American economy
- Teaching students about alternative economic systems around the world
- Helping students understand current events and issues in economics

Teachers were told that one or more of the instructional goals could receive the same ranking. For example, two instructional goals might equally rank as the most important reasons for teaching economics. If teachers had economic instructional goals not already listed on one of the four index cards, they were given four blank index cards to write in different instructional goals and then asked to rank them accordingly.

Because of their fluid and interdependent nature, Ms. Levitt had a hard time putting the four instructional goals in a particular order. Her rationale was as follows:

> I would say 'developing of basic economic concepts, principles, and the American economy' has to come first, because if they don't have that, we can't make them a reflective citizen. So I would say that would be number one. Then I would say 'forming critically minded reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters' is kinda an ongoing process. You're doing that the whole time. That's kinda your goal. It's in process all the time and the way that you're going to help them understand current events and help them understand economics. So you're going to connect it to what's happening in their world and then the world all around them. And then while you're doing that, you're teaching students about alternative economic systems around the world. I think the most important thing is having an

> understanding of concepts and having them understand how to make good decisions. That goes hand in hand.

Mr. Miller and Ms. Williams also ranked "developing an understanding of basic economic concepts, principles, and the American economy" as their first instructional goal because without it, they could not achieve the other three goals. However, Ms. Miller also ranked "helping students understand current events and issues in economics" as an equally important economic instructional goal because as she stated,

> You have to understand what's around you. You have to know what's happening. If we had been paying more attention, we wouldn't have gone through the Great Recession. And that's one of the things we need to help students understand so that when they become adults, it doesn't happen again.

Expanding on the interdependent nature of the instructional goals, Ms. Williams claimed, "By talking about the current events, that's how I get them to understand the concepts."

Ms. Williams explained that "forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters" was also at the top of her list because her school district was emphasizing critical thinking skills in all subjects since the general feeling was that standardized testing "did away with people being able to critically think." In second place, Ms. Miller believed developing students' abilities to think critically and reflectively was "going to affect how they lived the rest of their life." Both Ms. Miller and Ms. Williams ranked "teaching students about alternative economic systems around the world" as the least important goal because, according to Ms. Williams, the information was "a lot more than they can

comprehend or take in." Ms. Miller's rationale revolved around the idea that students only needed to know about alternative economic systems to understand where the United States stood comparatively speaking.

When asked what was the most important thing students should have learned from their economic instruction during the post-interview, all three teachers' answers related back to the impact economics had on the personal lives of their students. Ms. Williams said, "I want them to leave here understanding that all the events of the economy actually trickle back to them, and they need to understand how that works." Both Ms. Levitt and Ms. Miller added citizenship preparation to their most important learning outcome response, and Ms. Levitt stated,

> Number one: How do I make good choices? It doesn't matter if it's their life choices or financial choices, economic choices, however you want to title it. How to make good choices because good choices will result in good citizens. It all goes together.

Ms. Miller started her answer with students making smart choices about their personal finances which "inevitably are going to help the entire economy." When prompted to discuss her response in terms of the economic half of the course, she added,

> I want them to be active participants in what's going on around them and in the country and be aware of, 'Yeah, I'm just one person, but I can make a difference in what's happening economically in my area and in my life and, therefore, in everybody else's life. But it's my responsibility as an American citizen to do whatever it is that I can do to help the economy in whatever way I can. If it's something going on that I don't like, then I need to do something about it.'

The teachers were asked to share their personal strengths in teaching economics or what they enjoyed most. Ms. Miller kept her response short by saying she enjoyed "all of it" but found incorporating math the hardest part "because some of it is so hard to relate to them where they get fired up about it." Ms. Williams attributed her enthusiasm and excitement for economics to her teaching effectiveness as well as her sincere belief that her "kids will be better prepared and better citizens and better community members" after taking her course. As for her challenges in teaching economics, Ms. Williams felt that some of the macroeconomic content such as monetary and fiscal policy was too advanced for her students and it was "a little dry and harder to bring back to ownership" in a way to which students could relate. After emphasizing how much she loved teaching the class in general, Ms. Levitt exclaimed,

> I love teaching them how relevant [economics] is to them! That how they think economically everyday affects them but that they have control over a great deal of what they are going to do. And even if things feel out of control at home or with what's going on with them economically, they have a choice to do something personally that's totally different. I think that's very empowering!

Similar to the other two teachers, Ms. Levitt also admitted that integrating math and discussing monetary and fiscal policy were challenging in terms of keeping students engaged. Moreover, she mentioned the difficulty in helping students make global connections:

> You'll hear someone say, 'Well, who cares what's happening in Russia?' Well, the reason why you should care is because of this, this, and this. Sometimes it's hard to explain the dynamics of that for them when they're in 10th grade in [a

small town]. Some of them have never even been to Washington, D.C. in their life. So sometimes that's really hard.

Horizon Content Knowledge

Horizon Content Knowledge Beliefs

Horizon Content Knowledge (HCK) when teaching economics refers to teacher knowledge that enables teachers to make curriculum connections in order to integrate economic content with students' prior knowledge learned in previous grade levels and across current grade level subjects. Expanding upon this HCK definition, I found that teachers also intentionally foreshadowed economic content that was technically introduced later in the course. That is, teachers connected the economic content that they were currently teaching to other economic content within the course that they would later teach.

Broadly speaking, all three teachers indicated that making curriculum connections to previous grades and current subjects was important and even unavoidable. Ms. Levitt said, "I think it's important for every curriculum, for every subject. You can connect economics to everything, and I think when you connect it especially where they are right now in other courses, it makes more sense to them." According to Ms. Miller, such curriculum connections were "extremely important" because "it's just interwoven. You can't teach economics without talking about history…[and] how can you teach economics without touching on math?" She added, "So much of this stuff is English…[writing] in complete sentences, having complete thoughts, having a beginning, a middle, and an end. That's important for anything, any kind of communication."

At both Ms. Levitt and Ms. Miller's school, teachers from different grades and subjects were encouraged to collaborate, which they did by engaging in ongoing conversations in the hallways and faculty lunchrooms as well as in formal PLC meetings for particular grades and across subjects. "We even try to use some of the same definitions" across grades and subjects, Ms. Miller said. Ms. Miller went on to describe the co-curricular lesson that she and the science teacher at her school collaboratively wrote last year that won second place in the state's economic education lesson competition. The award-winning lesson taught students about the socioeconomic impact of the *tragedy of the commons* on the environment: "You can't have environmental science separate from economics…You can't have economics like the tragedy of the commons and not show how that affects the environment. They're linked." Ms. Miller and the science teacher switched classes to teach the lesson, which Ms. Miller said the students thought was "neat" and "cool" and was instrumental in students understanding that their respective subjects do not "just stop at the door."

Ms. Williams also believed that economic content should be connected to previous grades and other subjects:

> Clearly, because we see that history repeats itself, we need to tie the history into our economic decisions so that we will not make the bad choices that we've already made in the past. We use math skills because that's important to figure out how capital improvements are going to affect our bottom line. Things like that. Then, consistently, I feel like good English skills will just serve you for life, and so they need to do some reading and writing.

Unlike the other two teachers, the only limited collaboration with other teachers that Ms. Williams experienced was at the CTE department meeting, which she chaired. She did, however, say that she and the other two CTE teachers at her school who also taught the economic course would share instructional resources in passing.

Horizon Content Knowledge Instructional Practices

Horizon content knowledge across grades. In the state where this study took place, economic content was integrated into social studies at every grade level, starting in kindergarten where students learned about *wants, needs, choices*, and *jobs*. Each consecutive grade built on the economic content taught in previous grades, culminating with the economic course required for high school graduation. Economic content was included in the year-end state social studies assessments for Grades 3-11. I asked the teachers about their thoughts pertaining to the state's integration of economics into all K-12 grades as required by state learning standards and assessments, particularly if they thought it was important for the elementary grades to learn about economics. All three teachers unanimously agreed that the sooner students learn economics, the better. Ms. Levitt explained it this way,

> The younger that you can start instructing students on the importance of these economic concepts, the more….it cements it in their brain how to make decisions and what's this going to cost me to make this decision. And the other thing that it does, it helps them understand how it's woven into everyday life, and I think that for so long economics was considered so dry and boring and just a college class you took. Nobody else had to take it except for those people who signed up for that major. But economics is completely meshed in everything we do. So if it is indeed that, then it needs to be meshed in education K-12.

Ms. Miller also believed that students should start learning about economics early in their schooling experience because of its everyday life applications but mentioned the added benefit of preparing students for college-level economic courses:

> That's one thing that I think [the state] got right. I really don't think you can start too young because I think kindergarten students can begin to understand the basic economic concepts. You're not going to call them that, but you can do simple things like, here's two pieces of candy, which one do you want? You can only have one. So when you pick that one, the one that's left, that's your opportunity cost…So yes, I think start it in kindergarten and just keep adding to it going through. So if that happens, by the time they get into high school, we can go on into micro and macro, and they can almost knock out their first semester college course because they've had that background.

Instructionally speaking, Ms. Miller added, "I'm a firm believer that all knowledge is based on previous knowledge. You have to have something to hang your hat on."

In agreement with the other two teachers, Ms. Williams suggested that economics "needs to be ingrained early, and it needs to be built upon as they transition through school" for similar reasons as Ms. Miller and Ms. Levitt stated: "because they are making bad choices at early ages and because they need to know the difference." Ms. Williams said she also explicitly reminded students that they should have learned certain economic concepts in previous grades, especially when they have "dumbfounded looks" on their faces in response to the economic concepts she reviewed from elementary grades such as *opportunity cost* and *factors of production*. In previous years, Ms. Williams started her class with a 50 question multiple-choice test used by civics and economics teachers in the 7th grade to review for the year-end state assessment. She thought this test was a good way to remind students what they should have already learned about

economics in previous grades as well as to establish a common base of prior knowledge on which to build her instruction.

Additionally, I observed each teacher making occasional comments in class that referenced the economic content that they should have learned in previous grades. For example, wrapping up a lesson on decision making during the second week of school, Ms. Williams stated, "Any questions on these [basic economic terms] terms? This should have been a review since elementary school. The purpose of this class is to make good decisions." In the same way, while reviewing basic economic concepts at the beginning of the school year, Ms. Miller said, "When you think about *scarcity*, our *wants* will always exceed our *needs*. What is the difference between a *good* and a *service*? You should have learned this in the fourth grade." A representative example from Ms. Levitt's classroom observations happened after she showed a picture of a pizza on the overhead projector and went around the room asking students to name one productive resource needed to make a pizza, after which she concluded, "The items you just named are *factors of production*. You've had these drilled into you since elementary school. Resources are used to produce goods and services. This is going to be a super simple lesson."

Horizon content knowledge across subjects. For the purposes of this study, multidisciplinary instruction was defined as instruction that connected economic content to other core subjects beyond social studies such as mathematics and English. Interdisciplinary instruction, on the other hand, encompassed instruction that connected

economic content to subjects within social studies such as geography, history, and political science.

Multidisciplinary instruction. Many economic concepts and skills that the teachers taught involved mathematical computations. For example, students had to draw and manipulate graphs when learning about microeconomic concepts such as *supply*, *demand,* and *production possibilities frontiers*; calculate percentages and read bar charts when learning about macroeconomic indicators such as *unemployment rates, GDP*, and *inflation rates*; and, multiple and divide when learning about international economic concepts such as foreign monetary *exchange rates*. Despite all three teachers confessing that integrating mathematics into their economic instruction was challenging in terms of keeping students engaged, they did so nevertheless on a regular basis throughout my observations.

For example, I observed Ms. Miller teaching students how to draw and shift supply and demand curves based on fictional newspaper headlines about how businesses reacted to natural disasters. Also during one of my classroom visits, Ms. Levitt used a current event article that she found in *USA Today* to teach students how to read bar charts of U.S. unemployment rates based on gender, age, and ethnicity. Likewise, Ms. Williams explained fiscal policy by demonstrating to students how to read pie charts representing the federal government's mandatory and discretionary spending. However, unlike the other two teachers, Ms. Williams told me that she does not do much with supply and demand graphs beyond showing students what they look like and how to read them. She believed that incorporating more detailed mathematic applications would be

counterproductive for her students in understanding the larger economic concepts of supply and demand since most of her students had historically struggled with basic mathematic calculations and manipulations.

Integrating English into economics was also an inherent part of all three teachers' instruction on a routine basis during my classroom observations. For example, reading articles about current events in economics using various media sources and then writing paragraphs to summarize the events and relate them to economics were staples of each teacher's instructional practices. On one occasion, Ms. Miller used the premise of a classical English literature novel, *The Life and Strange Surprising Adventures of Robinson Crusoe*, as a springboard to introduce the concept of *trade-offs* when stranded on an island with limited *capital resources*. At the beginning of the year, Ms. Miller gave students a homework assignment that required students to write an acrostic poem using each letter in the word "economics" as the beginning word of nine statements summarizing what they learned about basic economic concepts. Shortly thereafter, students were given class time to write a one page essay using the EWT principles about an economic "mystery" they experienced in life, such as why students paid for bottled water at school when they could drink water from the water fountains for free.

Ms. Williams started several of the classes that I observed by telling students to write a personal reflection similar to a journal entry about a particular topic that they were going to discuss in class that day, such as their opinions about entitlement spending and the economic impact of the recent Ferguson race riots on businesses. In addition to incorporating writing skills, Ms. Williams said these brief writing assignments activated

students' prior knowledge and provided a space for students who typically did not contribute to class discussions to express their opinions privately. As part of the culminating assessment for participating in the Stock Market Game™ online simulation, students wrote a 400-1,000 word essay, according to the InvestWrite® national competition guidelines, which essentially required students to explain why they chose to invest in the stocks, bonds, and/or mutual funds in their portfolios. Ms. Williams entered each of her class's best essay into the national competition based on her subjective grading standards. Because her school emphasized literacy integration across all grades and subjects, Ms. Williams hung several literacy posters on the blackboard as a constant reminder to students about how to actively read texts using literary techniques such as Venn diagrams and cause-and-effect flow charts. Also in response to her school's focus on literacy integration, Ms. Levitt used political cartoons as a way for students to practice active reading techniques and critical thinking when she covered the unit on the *role of government in the economy.*

Interdisciplinary instruction. Of the three teachers, I observed Ms. Miller incorporating economic content connections to other social studies disciplines into her instruction most often, primarily focusing on history and often including history events described in the economic textbook. One such curriculum connection dated back to ancient times when she told students about the history of *money* and *banking*:

> Ms. Miller: People used to have bags of gold and silver in their homes. Can you imagine how worried you'd be if you had bags of gold and silver at home that you'd get robbed when you traveled somewhere? So they decided to build really strong structures to keep your gold and silver in it, and you'd only be charged a

little bit of money to keep it in the building. But what would happen when you traveled somewhere and needed to take some money with you? Can you imagine carrying chunks of gold and silver with you in your pockets or in a heavy bag? So, they came up with banknotes which had beautiful art work on them and said that "Mr. Brown had X amount of gold and silver in my bank." Then they could travel and would show the people in the next town the banknotes so they could get a room or buy something to eat with it. Sorta like the first checks. Then the banks thought to themselves that they needed to do something with all the gold and silver sitting around, so they decided to loan some to people for a small fee, which we now call *interest*. And that's how our banks got going. In those days, your note was literally backed by gold and silver which is what is called *commodity-backed money*. Today we call our money (holds up a 20 dollar bill) *fiat money* which means it's not backed by gold or silver. The U.S. government is what gives our money power. You all give it power, too, by agreeing that this is a 20 dollar bill. What if we all agree that this wasn't 20 dollars, would it be worth anything? No. So there are really two things that give money power—the government and we, the people. Does that make sense? Did you all get that? (students do not respond) Nod yes, up and down, or no, left and right.

Another example of Ms. Miller incorporating history into her economic instruction occurred as she introduced a unit on the *role of government in the economy*, which included a personal story about her grandfather. Ms. Miller began by explaining that before the Great Depression, the federal government had a hands-off approach toward the economy, except for in times of emergency like the Civil War and World War I. However, at the beginning of the Great Depression, she explained, the government continued to stay out of the economy until things worsened, at which point Franklin Roosevelt offered a different approach to economic recovery after winning the presidency in 1932. Ms. Mills then asked,

Ms. Miller: Who was Franklin Roosevelt?

Students: (nobody answers)

Ms. Miller: Come on, please?

Kaleb: A president.

Ms. Miller: Have you heard of the New Deal?

Students: (a few students nod yes)

Ms. Miller: Oh good, you're the only class that has admitted to it so far.

Ms. Miller then reviewed with students that Roosevelt's New Deal greatly increased the federal government's role in the economy by creating new government programs that generated jobs and the social security system as well as regulated businesses and banks. Ms. Miller continued,

> Ms. Miller: In fact, my grandpa would always tell us stories about when he worked for the [Works Progress Administration or] WPA, which he said stood for "We Piddle Along." The WPA was who built country roads for the government way back when, which is why they're so crooked. Have you ever noticed that country roads are so windy and that there's hardly ever a straight road from Point A to Point B? Well, that's because the WPA workers would take their time to build a road because they got paid 50 cents a day. The windier the road, the longer it took to build, right? So these workers stayed employed longer and made more money that way. What happened to bring us out of the Depression?
>
> Carter: World War II.
>
> Ms. Miller: Yes, men went off to war and sent their paychecks back home. All the women and other people started working to produce ammunition and clothes for the war. When the war was over, the people thought the government would step back out of things, but not so. Instead the government passed the Employment Act of 1946, which if you'll look on page 223 [in your textbook] said: 'The Congress hereby declares that it is the continuing policy and responsibility of the Federal Government to…promote maximum employment, production, and purchasing power.' So the government had more power over the economy than ever before.

Finally, the following history-related classroom exchange between Ms. Miller and her students occurred as they talked about command economies in relation to the collapse of the Soviet Union:

> Ms. Miller (referring to the chapter introduction in the economic textbook): Who has heard of Boris Yeltsin?
>
> Students: (nobody raises their hand)
>
> Ms. Miller: What are they teaching you in history class these days? Okay, what happened to the Soviet Union?
>
> Carter: It collapsed.
>
> Ms. Miller: Yeah, then what happened?
>
> Carter: It was divided up.
>
> Ms. Miller: Right, it gets cut up into pieces because it collapsed. Why?
>
> Lance: It was too big?
>
> Ms. Miller: No, it's [currently] about the same size of the U.S.
>
> Nancy: Something about the economy.
>
> Ms. Miller: Yes, it had a totally different economic system than we did which caused it to collapse.

Ms. Miller went on to explain that the military was a huge focus in the 1980's in the former Soviet Union which negatively affected the economy because of the *allocation* decisions made in regard to its available *factors of production*.

> Ms. Miller: We can't think about an economy without talking about the factors of production, right? How many are there?

Kaleb: 3

Ms. Miller: What are they?

Kaleb: Land, labor, and capital.

Ms. Miller: Right. Let's talk about labor. What about labor? Nobody had a choice. They all had to go to military. What happens to agriculture, industries, shops, and retail stores when you remove a great portion of the labor force? You don't have people working in shops. And if you're using so much of your capital and steel to make military weapons instead of say, housing, who does it end up hurting?

Kaleb: The people.

Ms. Miller: Right. It literally got to the point where people stood in line for bread for days. Family members would even take turns standing in line. This is what happens in a command economy. A central planning committee decides all three questions: What to produce? How to produce? And for whom to produce? They also decide where it goes. There were warehouses full of grain that never made it to distribution centers that just rotted…It would sit on docks because no slip of paper told people to take it to the warehouse or a slip of paper that said to take it to the stores. There was no communication. This happens when few people make all the decisions, and there's no communication. They also had a lot of propaganda about America. What is propaganda?

Student: Things that aren't true.

Ms. Miller: Basically lies. They liked to boast that their stuff was cheap, which was true, but it wasn't made well. Have you heard the expression, you get what you pay for? Only the wealthy could get good stuff on the black market but poor people could not. When Yeltsin came to the U.S., he wanted to go to supermarket when he got off plane and cried when he went inside. They showed it on TV. He couldn't believe you could have so much food available in one place. Yeltsin admitted communism leads to failure.

Ms. Miller concluded by reading a quote of Yeltsin in the textbook, which he made in 1990 in reference to his supermarket visit. Although less often than in her lectures, Ms. Miller included interdisciplinary connections in student assignments like when she

required students to research and include the history of minimum wage in preparation for a class debate.

While I observed Ms. Levitt integrating history into her economic instruction slightly less than Ms. Miller, Ms. Levitt did, however, include a variety of social studies disciplines into her assignments more often than the other three teachers. In reference to her classroom exchanges with students, two observations best represented Ms. Levitt's interdisciplinary instructional practices. The first observation captured Ms. Levitt's connections to history when she explained to students the basic characteristics of command economies:

> Ms. Levitt: Give me some countries that had control of their economy. Think back to your history class.
>
> Students (randomly): Germany, Russia, Japan.
>
> Ms. Levitt: Thinking historically about these countries, how efficient were these countries at the time of their command?
>
> Paul: Not very.
>
> Ms. Levitt: What have you learned about what it was like for these people?
>
> Tim: Atrocious
>
> Ms. Levitt: Give me specific examples.
>
> Tim: The government prioritized military goods over agriculture.
>
> Ms. Levitt: Think about North Korea, which has a command economy. I usually show a video about what life is like in North Korea, but we don't have time this year. There's extreme poverty and starvation. Shortages are common in command economies or there are oversupplies of stuff nobody needs that just sits and rots. It's extremely inefficient. People over there don't even have Internet or

know what's going on in the world. They're in a bubble. What's another example of a current nation that has a command economy?

Students (randomly): Russia, China.

Ms. Levitt: What about Cuba? Think about a command economy. It's being commanded about what to produce, how to produce, and who gets it. Let's talk about China. What kind of government does China have?

Tim: Communist

Ms. Levitt: What kind of economic system do they have? Mixed. We think it's going to be a command economy, which is very different. They had to compete globally, so they had to make changes. You see capitalism threaded throughout society, which is weird to think about. When I was there in November, I didn't expect to see that. I went to Beijing and Singapore. There are military people in the streets, and you know you're being watched, but people are owning their own businesses, buying and selling. China has a fast growing population of millionaires and billionaires, both men and women. I met a woman who designs skyscrapers, and she said they know the government watches closely but they can still make money, even though they have to pay the government taxes. They know they have to grow locally to compete globally.

The second observation entailed her lecture about *inflation* and *deflation* in reference to gas prices in recent history:

Ms. Levitt: Why do jobs go away with deflation? Doesn't make sense. Why?

Debbie: Businesses aren't making enough money to pay their people.

Ms. Levitt: Yes, they have to drop wages which means you spend less, and then what happens to businesses? Then they make less money and have to lay off workers or might even hire people at lower wages. Inflation and deflation can both be serious problems to the economy just in opposite ways. If I have to raise my price of production—for example, the price of your labor since it's a factor of production—then my prices go up and you still can't buy as much. The Federal Reserve tries to put policies in place to control inflation, or sometimes the government even steps in like in 1979 when they controlled oil prices. We had to sit in lines for hours a day just to get gas, and you could only get gas on certain days based on your license plate.

Despite observing fewer interdisciplinary connections in Ms. Levitt's class discussions, her students completed two in-class assignments that heavily involved a variety of other social studies disciplines. Spanning three class periods, the first interdisciplinary assignment, which she created herself, was a culminating project that compared the economic systems of North Korea, command economy; the United States, a mixed economy; and, Chad, a traditional economy. See Appendix N for a copy of the assignment. One the first day, Ms. Levitt shared the following learning outcomes with the students:

> Ms. Levitt: Today we're going to be building on your prior knowledge of economic systems and governments covered at the beginning of the year and compare the differences between three different countries—Chad, North Korea, and the United States—coming full circle, using your background in how markets work in terms of producer, consumer, and government behavior. This will be a three day activity that is learner-centered, collaborative, and involves peer teaching and drawing conclusions.

Then, students were divided into three groups, each group representing one of the three countries. To save time and later gain the benefits of cooperative learning, students independently accessed the CIA World Factbook on their classroom laptop to research and gather data about their assigned country in terms of its geography, people, government, and economy. The data that the students found, some of which Ms. Levitt warned would require students to "dig a little deeper" on other websites, was recorded on a chart. Geography content recorded on the chart included each country's natural resources and land usage; sociology content included life expectancy at birth, fertility rate, and literacy rate; government or political science content included how leaders were

elected and government and military spending as a percentage of GDP. The most data was collected about each country's economy and included the following types of data: type of economic system, most serious economic problems facing the nation, GDP per capita, population below the poverty line, labor force by occupations, industries, agricultural products, and infrastructure (e.g., paved highways, Internet service, and electricity).

On the second day of the project, Ms. Levitt told students to get into small groups of two or three students who were assigned the same country to first check the data they had collected with each other and then answer the first six of seven questions listed on another handout. Ms. Levitt emphasized the need for students to discuss the questions in depth before writing anything down because the questions were designed to require higher-order thinking in order to draw evidenced-based conclusions about each country's economic system. The interdisciplinary six questions were as follows:

1. How can the presence or absence of natural resources and arable land affect a nation's economy, regardless of the type of economic system?
2. How can the life expectancy and literacy rates affect the quality of labor in the economy?
3. How can fertility rates affect the use of scarce resources?
4. How can GDP per capita and poverty rates indicate standards of living in each system?
5. How can the size of the industrial/service sector and the agriculture employment rate indicate the level of industrialization?

6. How can electricity, communication, and transportation facilities indicate the potential for industrial growth?

Then, Ms. Levitt used a jigsaw instructional approach where students regrouped, forming groups containing one student from each of the three countries. Students spent the last 20 minutes of class peer-teaching the data that they had found about their assigned country to their group members, who recorded the data on their charts. For the first 10 minutes on Day 3 of the project, students reassembled into groups comprised of students representing different counties and collaboratively analyzed the data for all three countries and collectively answered the last question on their handout:

7. Considering the lack of natural resources, the labor problems, and the lack of capital and little industrialization of developing countries, how can developing countries develop?

Afterwards, Ms. Levitt handed out a new chart that instructed students to draw overarching evidence-based conclusions by comparing and contrasting the data collected for the three countries using the four traits, or interdisciplinary topics: geography, people, government, and the economy. The last column of the chart provided space for students to make observations about the differences between the countries and the reasons for the differences. Not only did this project explicitly involve students making interdisciplinary economic connections to other social studies disciplines, but it also involved researching and applying economic statistics, higher-order thinking, reinforcing literacy skills, and learning in cooperative groups.

Another example of an interdisciplinary and multidisciplinary assignment used by Ms. Levitt was a Webquest on the Federal Reserve System. See Appendix O for a copy of the assignment handout. Using the various Federal Reserve System websites, students used geography skills to map where each of the 12 Federal Reserve Banks are located and history skills to describe how U.S. currency has changed over various historical time periods. Math skills were also practiced by reading and interpreting graphs about *unemployment rates, the Consumer Price Index*, and *real GDP*. Additionally, English skills were utilized by reading online publications about the Federal Reserve System and drawing evidence-based conclusions. While the Webquest basically required students to retrieve information from the Internet in ways similar to retrieving information from textbooks, it did allow students an opportunity to practice citizenship skills in finding and understanding complex information about the economy. All three teachers agreed that learning about the Federal Reserve System was particularly challenging for students due to its multifaceted operation and the teachers' inability to find interesting curriculum materials and to make meaningful connections to students' lives.

Ms. Williams was the teacher who made the least number of interdisciplinary connections in her instruction during my observation period because she said she was "embarrassed" to admit that most of her students did not know much about history and thus required more explanatory instructional time than she thought she could afford. After she "assessed what they don't know" about history in any given lesson that had unavoidable historical connections, she tried "to explain it just as minimally as possible" because she always felt that she needed to get back to her economic instruction.

However, albeit infrequently and briefly, Ms. Williams did at least reference historical events, as the following discussion about banking demonstrated:

> Ms. Williams: Why would we want to shop banks? That "I" word again.
>
> Student: *Interest*.
>
> Ms. Williams: Yes, you want to put your money in a bank that pays the most interest.
>
> Ms. Williams: What happened during the Great Depression?
>
> Student: People lost lots of money.
>
> Ms. Williams: There was a run on banks and people took their money out of banks and kept it at home. Why should we not do that?
>
> Student: You're not going to get interest.
>
> Ms. Williams: Some people still do it and think their money is safe.

Another brief interjection of history content occurred when Ms. Williams discussed the economic impact of legalizing marijuana in more states, as the following conversation showed:

> Ms. Williams: We're going to spend 15 minutes talking about the legalization of marijuana. I did my research, and the expert person I talked to said I didn't know my population enough to be having this discussion with you [yesterday]. Some of you don't talk much in class and that's alright, that's okay, but I do need to know that you have an opinion…My source told me that we need to think about some things that we haven't discussed about the legalization of marijuana and to keep in mind that things are never simple. My husband is my expert source because he has worked in the drug field for almost 30 years. So, if it was legalized everywhere, do you think everybody could be a producer of it?
>
> Robert: More people would try to grow it if they knew they could use it legally.

Tim: But you could only grow so much of it.

Ms. Williams: What two substances have been through where we are today with marijuana? You should know your history.

Robert: Alcohol.

Joanne: Tobacco.

Ms. Williams: Do we need regulation on alcohol and tobacco?

Students: (several students say yes)

Ms. Williams: Tobacco does not alter your state of being or impair your judgment like alcohol. But being from the south, which was and is still today a big tobacco industry, how has banning people from smoking affected tobacco growers?

Tim: It's caused them to lose money.

Ms. Williams' interdisciplinary connections to prohibition movements in the past were somewhat vague, yet aligned with her intentions to only "minimally" review history content that she claimed many of her students probably did not know. No assignments were given by Ms. Williams that overtly included interdisciplinary components while I observed her class.

Horizon content knowledge within subjects. I regularly observed all three teachers foreshadow economic concepts in lectures and activities that would be officially introduced to students later in the course. Perplexed about whether these economic content connections within the course were intentional on behalf of the teachers' instructional strategies or rather just a function of the interdependent nature of economic content, I asked the teachers for clarification. All three teachers said it was mostly

intentional. Similar to the prior knowledge benefits of teaching economics by making connections to other core subjects and social studies subjects, these teachers routinely established prior knowledge of economic content within the course by talking about future economic content using nontechnical economic verbiage. This unofficial coverage would be revisited later in the course at which point teachers would officially reintroduce the same economic content using technical economic language. Ms. Levitt explained it this way:

> In order to foreshadow some things, you have to know your curriculum and you have to purposefully look for things…to lay the ground work for prior knowledge [in economics], because sometimes they don't have it…When you foreshadow, it actually gives them prior knowledge when you talk about that concept…in normal human language…then a week later when I'm introducing the concept, it's firing for them.

Also pointing to the importance of prior knowledge, Ms. Miller had this to say about purposefully foreshadowing economic concepts:

> I had this professor one time who I think made more sense in this one class I had on education. He said all knowledge comes from previous knowledge. He said think of it like a hat rack. You have to have something to hang that knowledge on. So you have to build that foundation up, and then from there you can just keep on going. You kinda sneak in some concepts when you're explaining [other concepts], and then you've heard me say, 'Remember when we talked about so and so.' [Essentially, you're] introducing a concept that we aren't going to hit until maybe the next chapter…but that has developed a link.

However, Ms. Miller did credit the interdependent nature of economic content as well, by saying that she "seriously can't think of any [content] that we don't revisit. Everything rebuilds." That is, economic concepts are not taught in isolation. Both Ms. Levitt and

Ms. Williams also thought that they naturally foreshadowed economic content due to having a broad knowledge base of the economic content as well as having years of experience in teaching the course.

Of the three teachers, I observed Ms. Levitt foreshadowing the most economic content. One representative example included the following class conversation about *command* and *market economies* that occurred during the third week of school:

> Ms. Levitt: Do not confuse an economic system with government, remember. What kind of government did Hitler run?
>
> Tim: He was a dictator.
>
> Ms. Levitt: Yes, and Germany was a command economy who put most of their resources into military war production. Do you remember learning about how their money devalued to nothing? They had to use wheel barrels to bring enough money to buy a loaf of bread. They even burned money for heat in the winter and used it as wallpaper to insulate houses. It wasn't worth anything. There were oversupplies of some stuff, but if it's not demanded, it's not going anywhere, which is very inefficient. People weren't getting what they needed. In a market economy, control is not given to government but given to who? Buyers and sellers. They're going to agree on a price that they're will to pay and accept.

In addition to making interdisciplinary connections to history in this brief exchange, Ms. Levitt also foreshadowed the economic concepts of *deflation, purchasing power, supply* and *demand*, *equilibrium price*, and *shortage* and *surplus*, all of which would be formally introduced later in the course. Another example occurred when Ms. Levitt explained the economic concept of *consumer sovereignty* and also alluded to supply and demand concepts that would be covered nearly three weeks later. After writing the statement

"Consumers tell businesses what they want by their dollar votes," the following conversation about students' buying habits ensued:

> Ms. Levitt: What's a dollar vote? If you went into 7-Eleven, what would you buy, Koby?
>
> Koby: A bag of Doritos.
>
> Ms. Levitt: So he just cast his dollar vote for Doritos. Helen, what would you buy?
>
> Helen: Mountain Dew.
>
> Ms. Levitt: What are they telling the producers?
>
> Helen: That they want that product.
>
> Ms. Levitt: What if Helen goes to 7-Eleven and sees a new flavor of Mountain Dew? Say papaya flavor? Would you buy it?
>
> Helen: No.
>
> Ms. Levitt: Who would buy it? (several students raise their hands) Let's say you buy it, and it's disgusting? Would you buy it again?
>
> Students: No.
>
> Ms. Levitt: What will Mountain Dew do if they know nobody wants papaya flavor?
>
> Paul: Stop making it or sell it to somewhere like Big Lots that takes discontinued items.
>
> Ms. Levitt: This relationship between producers and consumers is called consumer sovereignty.

A third example of Ms. Levitt's horizon content knowledge within the course transpired during a conversation between her and the students about the recent U.S. airstrikes in

Syria that were featured in the news the previous evening. The following excerpt demonstrated how Ms. Levitt weaved in basic *fiscal policy* concepts that would not be technically introduced to students until about four months later because macroeconomics was mainly taught near the end of the yearlong course. Connecting the current event details to introductory ideas about *government spending* and *taxation*, Ms. Levitt said,

> Ms. Levitt: When you look at the U.S. people, some groups want massive cuts to the military. Part of that meant people in Iraq got pink slips saying they were no longer needed. They want to cut military money in the budget. The economic "shtick," so to speak, is that they have to look at where they're going to get money to now fund these air strikes because the military is currently underfunded. We're sending in planes and 47 missiles from ships, which all costs money. That's double what we had in the budget. In two years, there will be $0 for missile air strikes. So, we must shift the budget around somehow. Some services somewhere are going to be lost or depleted, or we have to raise taxes to increase revenue to the government. Last night's military action affects the economy and our personal wallets.

Ms. Miller also demonstrated horizon content knowledge within the economic course, although on a less frequent basis. Indirectly alluding to *monetary policy* while discussing the three basic functions of money, Ms. Miller said,

> Ms. Miller: That's also why they're so concerned with counterfeit money. Anyone seen a new $100? My mom had one recently, and they're now putting a purple-ish thread through it, so it's harder to counterfeit. If too much counterfeit money gets in our economy, it floods the market and then the value of the dollar goes down.

Around the third week of school when talking about the characteristics of a market economy, Ms. Miller attempted to establish economic prior knowledge about supply and demand and the role of government in the economy, two units she would cover

approximately four weeks later. After verbally defining the economic concept of *market* for students, the following exchange occurred:

> Ms. Miller: How do we vote if we like something? No answer? With money (sings the main verse of the song *Money, Money, Money* by The O'Jays). When I buy something, did I vote for it? Yes. In our market economy, if I come up with a brilliant idea of a whiteboard, I have to come up with a way to get it [produced]. I have to go back to land, labor, and capital…I love the commercial that talks about how smells get into markers (smells a marker). What about labor? Can't make it myself. Do I want to hire workers with a high school degree or a college degree? Then what about my capital? Do you think I need a machine to make this? Yep. Then I have to do my research and do my marketing. Some of you might be good in marketing. There's a lot of psychology involved. Did you know millions of dollars go into cereal packaging? They don't like to use certain colors like yellow. Surveys have shown that yellow makes people feel sick. Think about the cereal aisle. Why do you think all the sugary cereals are shelved below the hip? (points below her hip) Who is that tall? Little kids, right? It's not on accident. It's good marketing. So, is the government going to come to me and say, 'Alright you want to make these? We'll let you make 5,000 boxes in these colors, charge this much, and send them to these places.' No, because we are a market economy. How do you decide on the price? If they sit on shelf, what's wrong?
>
> Kip: Price is too high.
>
> Ms. Miller: Right, so you lower the price and miraculously in a market economy, prices come to just the right point. That doesn't mean government doesn't step in at all. There are regulations and taxes you have to pay to the government. But they don't come in and tell you what to produce or control distribution either.

During the second week of school, Ms. Williams discussed the EWT principle that says "Voluntary Trade Creates Wealth." To emphasize the word *voluntary*, Ms. Williams asked each student to take out an item from their book bags that they would be willing to trade during the class period. After students walked around the room to see what other students were willing to trade, Ms. Williams debriefed the trading simulation

while simultaneously foreshadowing concepts of *supply* and *demand* and international trade concepts that would be formally introduced later in the semester:

> Ms. Williams: We need to understand that voluntary exchange is good. Trade what you have if you are happier after the trade. Did everybody like [Allen's] Spiderman folder? What motivates you might not be an incentive to somebody else. You have to bring something of value to the table. Who would have traded in here?
>
> Students: (two students raise their hands)
>
> Ms. Williams: Dayton didn't see anything he wanted, so he would have had to go to a different marketplace. Would anyone trade with Kerry for her Band-Aid? Different things have different demand at different times. Kerry, did you think you really brought something of value to the table?
>
> Kerry: No, but I didn't see anything I wanted to trade for either.
>
> Ms. Williams: That is why you'd have to go to another country to trade. That's a lesson for another day. You wouldn't want to have to trade X for Z, right? Voluntary is key for trading.

Another instance occurred at the beginning of the school year when Ms. Williams prepared students to participate in the online Stock Market Game™ by helping them decide in which stocks they wanted to invest while also introducing the *time value of money*, an economic concept that was technically introduced months later. The following conversation took place:

> Ms. Williams: How much did Walmart trade for when they started trading it?
>
> Janet: $5.
>
> Ms. Williams: I think the first shares from Walmart were 10 cents, but remember that was close to 50 years ago. We could dig on the floor to get a dime, couldn't

we? Walmart posts by its restrooms what their stock is trading at. What are they trading for now? Somebody log in and tell me.

Darren: $75.

Joanne (looks up the history of the Walmart stock price online and corrects Ms. Williams): 8 cents.

Ms. Williams: Remember a dime back then isn't a dime today. The value of money fluctuates. And if Grandpa bought it and your family still held it, ya'll would be in good shape. Typically the stock hoovers in the $50 range; $75 is a good chunk of change.

A final example of how the three teachers intentionally established prior knowledge within the course which they could make economic connections back to at a later date happened during the third week of school when Ms. Williams attempted to show students how they were an intricate part of the economy on a daily basis. She led her nontechnical discussion about the *circular flow of money in a market economy*, a macroeconomic model, as follows:

Ms. Williams: Get out sheet of paper, and write down what you did over the long Labor Day weekend to contribute to the economy.

Mike: I didn't do anything to contribute to the economy.

Ms. Williams: I guess that's possible but not probable. If you don't think you contributed in any way, then just write down what you did each day and we'll analyze it to see if there's any way you contributed.

Ms. Williams (after giving students five minutes to think and write): I'm going to tell you what Ms. Williams did this weekend, and we're going to see which industries I contributed to. We need to figure out if we're contributors or non-contributors. We'll use my list since I had a more than usual exciting weekend, which I typically don't have. So, I went to the football game for one thing. Who benefited because we had an away-game?

Students: (nobody answered)

Ms. Williams: The other team, right? How so?

Kate: Concessions.

Ms. Williams: Yes, concessions. How did the players and cheerleaders get there? A bus, right? Who benefited from the teams taking a bus?

Janet: The gas stations.

Ms. Williams: Yes, who else?

Suzanne: The bus driver.

Ms. Williams: Yes, he got paid, right?...I supported what was going on in two different states because we went to see my son at college for parents' weekend. Every time we spend money, we're helping the economy, but helping our local economy is most important. When I spent money in West Virginia where my son is in college, I was not helping Virginia, right? We spend so others will have jobs. Steve, what did you do over the holiday weekend?

Steve: I worked for my Dad.

Ms. Williams: Who is in the salvage business, right?

Steve: (nods yes)

Ms. Williams: What industry drives it?

Steve: Metal industry.

Ms. Williams: If metal prices go up, you get more money, and Steve gets work. He gets money, and then he spends it. He also consumed resources while he worked. He drove to work and so consumed gas to get to work. We need to think about how we're being consumers and producers and contributing to the economy. We all have a part in this and we need to understand what that part is.

By discussing the basic elements of the *curricular flow of money in a market economy* in a way that directly related to students' lives, Ms. Williams laid the groundwork for

formally introducing this somewhat complex economic concept months later when she covered macroeconomics.

Specialized Content Knowledge

Specialized content knowledge in economics, according to Ball et al. (2008), is the economic knowledge and skills uniquely held by economic teachers as opposed to practicing economists, for example. The three teachers in this study demonstrated specialized content knowledge by intentionally using economic content to prepare students for various types of citizenship, casting more informed votes, understanding current events, and discussing controversial issues. These intentions were met with various levels of success and mostly free of political biases and disclosure. All three teachers also used economic reasoning in ways uniquely geared toward helping students unpack often difficult economic content and apply economic reasoning tools to their personal lives. Such economic reasoning tools included EWT principles, cost-benefit analysis charts, PACED decision making models, supply and demand graphs, and production possibilities frontier graphs.

Citizenship Preparation

Types of citizenship. During the pre-interviews, teachers were asked about what economic instructional practices, if any, do they use that directly prepare students for adulthood and citizenship. To probe further, I asked each teacher a follow-up question regarding which types of citizenship skills do their instructional practices generally develop in students: personal responsibility, participation in civic life, and change agents

for social justice issues (Westheimer & Kahne, 2004). Ms. Williams initially emphasized her instruction on preparing students to vote in local elections,

> We usually compare and contrast candidates by looking at their websites. Everybody likes to always be on the Internet, so we usually prepare a defense from what you can learn about somebody from their website. I like to divide the class down the middle and this side be for one candidate and this side be for the other [candidate]. Occasionally that's interesting because somebody's mad because they absolutely don't want to be for this candidate, so I have to let them move.

Of the three types of citizenship skills, talking with students about the importance of participating in their local community was most important to Ms. Williams. Yet when it came to developing participatory skills, she deferred to her school's extra-curricular organizations such as the National Honor Society, Key Club, and Student Council Association, which sponsored school-wide projects to combat hunger and domestic violence. As for becoming change agents in the community, Ms. Williams thought such skill development was likely age-inappropriate:

> You've got to remember, we are in high school, and it might be a little soon teaching the bulk of sophomores that they're going to change the world, not that you don't want to throw that out there as a concept.

In terms of participatory skills development in students, Ms. Miller recalled her lesson about the *tragedy of the commons,* a key economic concept when discussing the economic roles of government, where students developed and presented ideas about how to improve the public areas in their local town:

> We were doing *tragedy of the commons* and what would you do to improve [local town name]. They literally wrote plans in regards to what they would do with tragedy of the commons and things they have seen in town that they would like to see made better. It was a wonderful list: putting down the rubber foam instead of the other stuff for the playground equipment, moving things that they saw were dangerous, putting things in recycling centers, putting in energy efficient street lights. All the stuff they came up with by themselves, but it was in order to be better citizens, which they might not have thought of if we hadn't gone over all this information…We presented the [ideas] to the mayor and then the mayor picked out the top three, and they had their picture in the paper. Then he was going to present this long list of ideas from these students to the town manager, and he's going to take it to the council. They got the benefit of all that, and seeing that their ideas mean something…Some of the things [the mayor] really thinks might happen, which will be even better.

Overall, Ms. Miller thought her instruction was mostly geared toward developing personally responsible and participatory citizenship skills in her students, especially the students who are also part of the Future Business Leaders of America (FBLA) student organization for which she was the faculty advisor. Similar to improving their town's commons areas, FBLA students helped their local community by organizing a food and Christmas gift drive for 22 families. When asked about opportunities for students to learn social justice-oriented skills such as ways in which they could help eliminate the root causes of poverty in their community, Ms. Miller stated,

> In our school, 47 percent of our students fall below the poverty line. We talked about that and what exactly that meant. We did talk about some programs, but no, we did not get into the 'What can we do?' We talked about what can we do to help, but it stopped at 'We're collecting all this food.' When it came to, 'What can we do to keep this from happening?' the type of things that we talked about was people needing better jobs. They need more jobs. We kind of worked it into minimum wage: 'Would that help? Wouldn't it help?' Those types of things, but as far as coming up with some type of solution, we didn't.

Briefer in her initial response to my questions about the types of citizenship she aimed to develop in students, Ms. Levitt pointed to her incorporation of current events into her instruction as well as her hands-on instruction on how to complete tax forms, for example. When pressed further, Ms. Levitt felt that she developed an awareness of all three citizenship types in her classes at least for a few of her students based on their heightened maturity level:

> You have different students. They're not all the same. And you have some kids who are much more aware of the plight of others. Some that have it, some that don't, and there's discussion with them. And then you have others who you can have conversations with about what's going on in the government and the economy. And then you have those that you're just hoping they understand for themselves, so they can take care of themselves. So I think you're preparing kids of different levels…I don't know if at this age, though, they're at that affect-change age, go out there and do something…But, maybe we're laying the ground work for the future for them to go out and do that.

Ms. Levitt believed, however, that developing her students into citizens with participatory skills was her responsibility. Specifically, it was her responsibility to:

> Develop civic minded students, but not only civic minded but civically active, where they're actively participating in their community—state, federal, and globally speaking…I don't think all students will get there, but I think that we need to teach in such a way that we could…get them there through our teaching.

Similar to Ms. Williams, Ms. Levitt's instruction focused mainly on discussing these three types of citizenship skills rather than actually implementing class projects that actually developed these skill-sets. For example, Ms. Levitt taught a lesson on *trade barriers* set by the U.S. government in the sugar industry, which were designed to protect

one group, domestic farmers, for example, but hurt other farmers around the world. Class conversations typically ensued about how students thought the U.S. government might protect U.S. industries with fewer unintended consequences, an application of the EWT. Ms. Levitt also said that students usually engaged in class conversations about social programs in terms of where their tax dollars were being spent. In response to students who said they were unable to affect change related to social issues discussed in class, Ms. Levitt said she reminded them that they could affect change by voting and by "taking a job or career path that has to do with making change for people. You could work with nonprofits that benefit people directly."

Disclosure and liberal versus conservative perspectives. All three teachers said they were adamant about not directly sharing their political opinions with their students and strived to strike a balance between liberal and conservative perspectives in their classes. However, instances of overtly sharing their political opinions occurred in all three classrooms, albeit relatively infrequently during my four-plus months of observations. Far more times than not, teachers were successful in hiding their opinions and presenting both political sides of an issue, especially in light of the political unawareness of most high school students.

Perhaps the most resolute in appearing as "totally neutral" as possible was Ms. Miller. She even prided herself on the fact that students would accuse her of being Democrat and Republican in the same class. In response to students asking about her political affiliation, she had said, "I'm an American and that's none of your business." Her reasons for attempting to remain politically neutral were as follows:

> I think it's extremely important because it's not my place to sway them one way or the other… I think there are students who would just [automatically] lean towards my opinion and think, 'If Ms. Miller is a Republican then she cannot like Obama.' So then when we're discussing state of affairs or that sort of thing, then they will think, 'I'm going to be against Obama too because that way she'll like me.' They have to develop that on their own. I will tell them I hope that you don't just duplicate your parents. What I want you to do is study and learn and make up your own mind….You've heard me say in class, 'You're not right or wrong, but you have to have an opinion.'

Ms. Miller also was deliberate in establishing a safe classroom atmosphere by keeping students from freely sharing their political opinions in class if other students might be insulted in the process:

> I have to be very careful because there will be some extremely outspoken kids that you can just hear their parents coming out of their mouth and that's what they've heard all their life so they see nothing wrong with voicing their opinion or the fact that this might be insulting to another person who's sitting nearby. We need to back up and we need to rethink this. Now how can you say this in a different way that's not going to upset other people? You can have your opinion. Nobody's ever going to take that away from you. That's why we are America. This is a safe classroom and you say what you want to say, but it can't be to the point where it's hurting someone else.

Ms. Miller said she has to be especially careful because she always had students who wanted to complain about welfare and immigration, despite sitting next to or nearby minority students whose families were receiving welfare benefits. With reference to the degree to which Ms. Miller balanced a liberal and conservative perspective, she admitted that "it's hard because I have really strong opinions on some things," such as minimum wage, outsourcing, and unions. However, she believed that it was her job "to put all the facts out there and let them know both sides of the situation and then their job is to make

sense of it." In order to present both sides on a particular issue, she claimed, "I have to do the devil's advocate quite a bit, and some of them can have very convincing arguments and bring up things sometimes that I wouldn't have thought about. I like it when that happens."

During one of the rare times that Ms. Miller openly shared her more liberal leaning opinions without also sharing the conservative perspective occurred during a unit about the roles of government in our economy, specifically wealth redistribution, as the following conversation illustrated:

> Ms. Miller: We're always going to earn different incomes, right?
>
> Students: (a few students nod their heads yes)
>
> Ms. Miller: But because there's such a huge discrepancy between the rich and the poor—what's the old saying, the rich keep getting richer and the poor keeps getting poorer?—the government steps in by dividing the country into quintiles, or five equal parts, to know just how big of a gap there is between the rich and the poor and how to redistribute income and wealth. If you get a Democrat and a Republican together, they will go at it all day over this topic. Look at page 224 [in your textbook]. The top fifth of all households, making $100,000 or more per year, accounts for almost 50% of the total income earned in the U.S. $100,000 is probably a very conservative estimate if you think about all the ball players and movie stars and billionaires we have. The bottom fifth of the population only earned less than 5% of the total U.S. income. That's pretty ridiculous in my opinion. So if you are in that bottom fifth and making only minimum wage, which comes to about $13,900 in take-home pay, assuming about 35% in taxes, do you think that would be considered poverty level?
>
> Students: (no students answer)
>
> Ms. Miller: The whole class should say "uh huh."

Ms. Miller began her lecture the next day by reviewing what she had talked about the previous day concerning the role of government in *wealth redistribution*. Revisiting her previously expressed liberal opinions, she said,

> We talked yesterday about the huge gap between the rich and the poor, which nobody disputes. So the government steps in, and they should because nobody should be in poverty in a country as wealthy as we are. So when you talk about redistributing wealth, if you'd get Republican and a Democrat in the same room, the Republican would say it's the worst idea ever the Democrat would say it's the best idea ever. This is part of the problem, they're both so adamant in their beliefs that they can't get together and agree on anything. We know the system is broken, and income inequality has been going on way too long, and it's not going to go away unless we do something about it.

While Ms. Miller attempted to at least mention that Democrats and Republicans differ in terms of their support of wealth redistribution, she focused more on the Democratic perspective of income inequality.

However, I observed Ms. Miller also expressing opposition toward the government's wealth redistribution strategies during the same class period, as noted in the following lecture excerpt:

> Ms. Miller: Back when President Obama first came into office in 2008, he instated a stimulus package. Go home and talk to your parents about this. I'm sure they will remember. Basically, we were in the Great Recession because of the housing bubble and banks not doing what they were supposed to do. People were losing their homes left and right. President Obama issued a stimulus check for about $600, depending on how big your family was. I think I got $350. The government wanted people to go out shopping and to buy something new. Now, how often do we get that chance? Think about what the people did with the checks during that time. What do you think?
>
> Kaleb: They saved it.

> Ms. Miller: Yes, what else? They also put food on the table or paid one more mortgage payment hoping they could ride things out. So $600 times 130 million households. That's a lot of money. I personally think his advisors could have come up with something just a little more productive to do with our tax money.

Though Ms. Miller did not always present both liberal and conservative perspectives equally when talking about a particular issue, she did deliver a fairly balanced instructional approach during the course of my observations. As another example on a different day while teaching students the meaning of logrolling, Ms. Miller sided with the more conservative perspective of wasteful government spending as illustrated in the following direct instruction observation:

> Ms. Miller: Now sometimes there's government failure simply because of politics. The old, you scratch my back and I'll scratch yours. It's technically called logrolling. Write that down. (spells out) L-O-G-R-O-L-L-I-N-G. So, you sign my bill, and I'll sign yours, regardless of what's in it. So things get passed in Congress when politicians don't even know what's in the legislation. Have you heard of the "golden hammer" award? How many of you watch the news? You're all supposed to be. No one? At least you're honest. There was a government expenditure for a hammer, a real gold hammer, a while back that was ridiculous in price, which might even make you angry if you knew the exact amount. It's our tax money, so shouldn't we get angry? Anyway, every now and then the news will give a "golden hammer award" to businesses when they report on excessive taxpayer dollar expenditures by the government. You'd be surprised at all the wasteful tax dollar spending that goes on.

A final example of the rare occasions where Ms. Miller would unabashedly share her political leanings, in this instance opposed to more liberal notions of equality, was in the selection of a futuristic, science fiction instructional video called *2081: Everyone Will Finally Be Equal* during a unit on comparative *economic systems*. Ms. Miller began class by saying, "We're going to watch a movie based on socialism. It's about how socialism

is about being equal, which sounds good on paper because everyone has what everyone else has." The premise of the movie, while entertaining and impactful, was clearly somewhat of a spoof on many liberals' push for social equality, as the following introduction by the video's narrator revealed:

> The year was 2081, and everybody was finally equal. They weren't only equal before God and the law, they were equal every which way. Nobody was smarter than anybody else. Nobody was better looking than anybody else. Nobody was stronger or quicker than anybody else. All this equality was due to the 211th, 212th, and 213th Amendments to the Constitution, and to the unceasing vigilance of agents of the United States Handicapper General.

After the video was over, students partnered with another student to discuss and answer 12 questions contained on the back of the video sleeve cover, most of which scaffolded students' thinking about the ill effects of exaggerated social equality, commonly associated with command economies.

Like the other two teachers, Ms. Levitt was "very careful about reflecting [her] political affiliations in class," yet she fully acknowledged that her political views always influenced her instruction, regardless of how hard she tried to do otherwise, because "you're sharing who you are when you're teaching." However, if students directly asked about her political beliefs, she shared her views on issues but tried to make it a teachable moment in terms of typical party platforms:

> I will tell them that most Americans are moderate in their political thinking, and I would say that's what I am. I'm more moderate. I'm not hard right or hard left, but I would say I'm conservative. And then I would tell them this is what that means. We need to have smaller government. I think we need to be more aware of what the government is doing with our money. There's a lot of waste. I don't

> think certain programs should be overly large. I do think that we have people that need help that are getting help, but there are lots of people that shouldn't be getting it.

Sharing her opinions with students was sometimes necessary, Ms. Levitt claimed, because "if you're being real with your kids and if you're breaking it down into real information, sometimes you're opinion comes into it." But, Ms. Levitt concluded by reiterating, "I will never say my party affiliation" and "I won't come right out and say the decisions that are being made today are stupid."

Like Ms. Miller, Ms. Levitt rarely interjected her opinions about current economic issues naturally stemming from the economic content she was teaching in a way that suggested she sided with Democrats or Republicans. In keeping with her personal disclosure beliefs, presenting both sides of an economic issue as objectively as possible was the rule not the exception in her classroom, as the following exchange suggested:

> Ms. Levitt: So yesterday, you had to use your chart to summarize the eight different roles that the government has in terms of interacting with the economy. The number one thing I want you to remember is that government carries out its roles in the economy with regulations through agencies. What is a regulation, Paul?
>
> Paul: Something approved by the government.
>
> Ms. Levitt: Who has to follow the regulations set by the government?
>
> Paul: The people.
>
> Ms. Levitt: What about businesses and firms? The government is saying this is the way things should be and the way things should be operated, so consumers won't be hurt or injured. Government uses regulation to put boundaries on what people and businesses are doing. Passing regulation is different from passing a law. However, regulations typically come with fines and sometimes prison time

like laws. Yesterday, four banks were fined several billion dollars because they were trying to fix currency rates among themselves. Regulations are in place to prevent stuff like that. So sometimes regulations help, but sometimes they hurt. Let's talk about the actual roles of government now…

In spite of personally opposing a larger government and more business regulation, Ms. Levitt attempted to keep her traditionally conservative opinions out of her instruction.

However, as was the case with Ms. Miller, I did observe Ms. Levitt expressing her opinions, albeit infrequently, in both overt and more subtle ways. One of the more obvious expressions of her conservative stance in regards to taxation took place after she started class by encouraging students to vote in the school's mock election taking place in the library that day, the day before Election Day. Walking around the room to give students the lesson's handouts, Ms. Levitt had the following conversation with an 18 year old student that continued in front of the class for all the students to hear:

Ms. Levitt: Did you register to vote?

Paul (who was 18 years old): I'm not going to register because I don't plan to vote. I'm just not into politics.

Ms. Levitt: I hate politics, too. Why do you think I hate politics? But politics is like economics because it touches your life in every part. It's gotten so negative over the last couple of voting cycles, but we still express our voice in government through our vote. It's hard to know what the candidates believe in anymore because people are throwing battle axes and bombs at each other. Think about when you watch TV, can you think of any commercial that actually talks about the candidate's position on issues? It's all about what the other candidate has done wrong in the past. One commercial for a race in another state had a male candidate say that his female opponent was attractive and had a nice voice and that might be reason enough to vote for her, as if to suggest that she didn't have an intellect to run on. In that sense, I'm very discouraged by it. But when I see my paycheck and all the taxes taken out for scandals and wasteful spending, I definitely want to try to change who is in office, and voting is the only way you

> can change things in a democracy. Just something for you to tuck into the back of your brain and think about.
>
> Paul: I sit back and don't do what they tell me anyway.
>
> Ms. Levitt: Think about it with your work. Do you want someone in office who wants you to pay higher taxes or you to have more money?
>
> Paul: More money.
>
> Ms. Levitt: Well, if you don't vote, you will have people in office that are taking more of your money through higher taxes. My husband gets bonuses for getting top secret clearances, but it's taxed at 30 percent right off the top. Half of the money people win with the lottery is taxed and given to the government. If you don't vote, the government will continue to take tax money. You want people who will protect your [financial] freedom, or else we can lose that.

Ms. Levitt's public exchange with the student did not directly associate higher taxes with the Democrat party, but rather inferred the relationship since the Democrat party was in charge of recent tax policies on both the state and national level. However, whether students made the connection on their own was not discernable.

Another brief but explanatory example occurred during the beginning of the school year when Ms. Levitt was introducing students to the six principles of the EWT. In reference to Principle 6: Markets Coordinate Trade, Ms. Levitt conveyed her conservative leanings by adding: "When the government is too involved and there's a lot of control and regulation, the markets don't do as well. We like to see the government less involved and let the markets coordinate trade instead." Having a similar partisan outcome in relation to a class project, Ms. Levitt told students that they did not have to give equal weight to Karl Marx's socialistic theory of economics since she did not cover it in class. Students were told to just "look it up and write a simple statement about it

somewhere on the brochure" that students were creating as an assessment on types of economic systems. Again, while not overt anti-liberal statements, this economic content downplay suggested a more conservative position.

Yet, there were far more instances where Ms. Levitt withheld her more conservative political opinions, allowing credence to be established for the liberal perspective as in the following class conversation about taxes:

> Ms. Levitt: Redistributing income. What does that mean, Ann?
>
> Ann: Some people make enough money to pay taxes for other people's Medicare.
>
> Ms. Levitt: Bottom line is that some people make enough money to pay taxes, and the government takes that money and gives it to people and needy families living below the poverty line.

In a similar way, Ms. Levitt's choice of debriefing questions pertaining to a current event assignment favored a more liberal position about *taxes* and *public goods and services*. Students were required to find two news articles about public goods and services and then answer a series of questions including the following: How does this public good or service benefit your community and you personally? What would happen if the government stopped using tax dollars to provide this good or service? How would this negatively affect your community and you personally?

Ms. Williams also believed, perhaps more firmly than Ms. Miller and Ms. Levitt, that students "shouldn't know what your opinions are because you shouldn't be tainting them. The purpose of the class is for *them* to make good decisions." Ms. Williams was

more concerned about showing students the differences between the two political parties and the ways in which both parties made false claims. She stated,

> I try to keep [my political opinions] to myself because I don't want there to be a bias. I mean, there is a bias. There's never not a bias. But, when I have a class that is obviously more liberal and I'm more conservative, I think it's important for them to not really know that I'm conservative or they will tune me out and not be as in tune with where I am trying to get them to go because there is good and bad to both sides.

However, on the rare occasion when Ms. Williams felt like there is no way for her to keep her biases out of the class discussion, she did take ownership of her opinions by prefacing her comments by saying, "It has been Ms. Williams' experiences that…" or "Ms. Williams' opinion is 'blank' because…" For example, when she shared her thoughts about state employee benefits, she reminded students that she and her husband were both state employees; therefore, she had "certain types of opinions about how the state is providing for their employees because that pays all my bills." Essentially, she tried "to explain to them that it's okay to have an opinion that you can justify" but still intended to share her opinions as infrequently as possible.

Ms. Williams felt like she balanced liberal and conservative perspectives in her classroom, or at least that was always her intent. Rather than playing devil's advocate like Ms. Miller, she preferred using more subtle questioning techniques to make sure students understood both sides of an issue. Using comments that students volunteered in class, Ms. Williams would "try to lead them where they need to be instead of…lecturing"

by asking leading questions. Her main reason for using this indirect approach to balancing liberal and conservative perspectives was because of parents:

> I don't want anybody to think I'm trying to put opinions in their mind or that I'm attacking lifestyle choices like saying it's not a good idea to grow up and your main plan be to live off government subsidies. You can't say that's wrong. They need to figure that out for themselves and look at how much money it costs to live and what if I can't get that much money, how am I going to live?

To avoid appearing as the one who brought up a certain idea in class that might be polarizing, Ms. Williams played "word games" with her students by giving them the first letter of a word and asking them to guess the word based on the context of their discussion. This was so that the students would be the ones who explicitly introduced a new perspective associated with the word into the discussion rather than Ms. Williams, although one could argue that Ms. Williams was still the initiator of the idea.

But again, like Ms. Miller and Ms. Levitt, Ms. Williams appeared to remain impartial on economic issues that typically evoked contrary opinions from both sides of the political aisle far more often than not. Discussing the benefits of working for the government, Ms. Williams told students:

> Ms. Williams: Tell me about the postal service. What do we know about the postal service?
>
> Suzanne: It's run by the government.
>
> Ms. Williams: Okay, it's government run. I remember growing up, I had a friend whose parents both worked at the post office, and we just thought that was the greatest thing. Is that a good job to have? We want to think government jobs are good jobs. How do you send mail?

Janet: Through the post office.

Ms. Williams: Postal workers were off yesterday for Columbus Day. Those government jobs have some real benefits. They have lots of holidays. The article I just read says there are a lot of benefits when working for the post office. Who else was off yesterday? A "B" word?

Joanne: Banks.

Ms. Williams: A lot of you don't think about holidays when you take a job. Anybody not like to be paid for the day off?

Conversely, Ms. Williams would also sometimes share her conservative opinions as the following dialogue about the government's $2.54 trillion of mandatory spending exemplified:

Ms. Williams: Ms. Williams can't even wrap her mind around the number trillion.

Joanne: But, I think giving foreign aid will help us in the future because [other countries] might be willing to help us in the future, too.

Ms. Williams: The word 'might' scares me. When you're in trouble, who do you count on?

Janet: Nobody.

Ms. Williams: Yes, you're right, sometimes nobody, but nine times out of 10, hopefully you can count on your family, but you can't even count on them all the time. People are concerned about all the wasteful spending and want to reform entitlement programs. Let's say everybody gets some government money in here. Then let's say I take $20 from you (walks toward Janet), $100 from you because you're getting a lot more money for your big family (walks toward Joanne). If I'm glad to pass out money, you're happy to see me. But when I'm taking money to reform the system, how many are going to be happy to see me? Do we understand the problem with that?

Janet and Joanne: (both nod yes)

> Ms. Williams: Our goal should be to work for money and be able to decide where it's going. But there will have to be unpopular decisions made by politicians if reform will happen. What will happen to them?
>
> Kate: They'll be ousted.
>
> Ms. Williams: Yes, when you take something from people, you will be unpopular. Who can live on less money? My husband got a raise just to cover the increase in healthcare premiums, so they wouldn't be getting less money at the end of each month.

Reforming government spending, particularly entitlement spending, is traditionally an agenda of the conservative party with which Ms. Williams identified.

Casting more informed votes. All three teachers were asked in the post-interviews about their confidence level regarding their students' ability to cast a more informed vote in the next Presidential Election in 2016 based on their newfound economic knowledge and skills. Ms. Levitt replied,

> I talk to them a lot about the idea of being a responsible voter. And I said we all have our own personal moral beliefs, and I said when you're making a decision about who's going to be in office, you have to look at what their economic platform is because those are the things that are going to affect you the most. Yes, you want a candidate that meets every criterion. We would all love that, but I'm going to vote first on the ones that have the economic platform that most fits what I want done in my country or my community or my state. I think that we have a lot of irresponsible voters that have voted for people over popularity, and they have no idea what they are voting on or why they're voting for that person.

Ms. Miller also stressed the importance of students understanding the traditional economic platforms of both parties in order to cast a vote that most closely aligns with what the students believed about economic prosperity. She thought that her instruction

had equipped students with an "arsenal of questions" about the economy that they can ask about each candidate's specific economic policy proposals.

While Ms. Williams also said her students were in a better position to vote intelligently in the next election because of her class discussions about local and state elections every October. However, she was unsure about whether or not the students would simply default back to how their parents voted, even though she encouraged them to make up their own minds irrespective of their parents and vote according to their own convictions. Ms. Williams was the only teacher I observed who modeled how to differentiate between candidates running in their local town council election, using a modified version of the PACED decision making model. This economic skills-based instructional practice was an illustrative example of Ms. Williams' instructional goal of forming critically minded citizens who understood economics on a local level. While passing out a news article copied from the town's local paper titled "Six Vie for Four Council Seats" during the first week of October, Ms. Williams told students,

> I'd like to talk about this closer to the election, but this came out of the [Town Name] Bulletin this weekend, and nobody likes to talk about old news, so I think we need to talk about it now. It's so important. Get out a sheet of paper and draw six boxes.

Ms. Williams drew six boxes on board and then wrote the names of each candidate in one box as well as listed the voting criteria below the set of boxes as the class conversation progressed. See Figure 1 below.

Candidate 1 Name	Candidate 4 Name
Candidate 2 Name	Candidate 5 Name
Candidate 3 Name	Candidate 6 Name

Voting Criteria
money management
education
community and economic development

Figure 1. Ms. Williams' Modified PACED Decision Making Model for Political Candidates Activity.

Ms. Williams: The reason for the boxes is to get a better visual for ourselves. I don't want to insult your intelligence, but my first period had a hard time with this, so we're going to read about one [candidate] together, which worked better in second period. So, what might be some criteria? Remember we have to know what we're looking for before we can make good decisions, and the same thing is true in deciding which city council member to vote for.

Kate: Charismatic.

Ms. Williams: Okay, yes, but that's more about the person. Let's think about something more economics-related. Look at [Candidate 4 Name]. What is he doing to improve our community? He cares about community and wants to give back. We want qualities in elected officials that benefit us. What in an elected official might benefit us directly? We don't want elected officials who are poor at what? An "M" word?

Robert: Money.

Ms. Williams (writes "money management" on the board below the boxes): Yes, money management. So, we are going to set some class criteria. You can't just vote for someone because you know them or their cousin. Who has younger siblings in here?

Students: (about 4 students raise their hands)

Ms. Williams: Anyone who goes into politics now, you're probably no longer going to be affected, but Joanne has really young siblings, so there will be probably be some real changes by the time they get to this school. We care about the education coming behind us and if you stay in this community, your children will be affected, too. So, let's put education as a criterion (writes "education" on the board below the boxes). Not where [the candidates] went to school, but how they propose to improve our schools. We also care about something else that everybody should get because you're in this class.

Janet: Make [Town Name] better.

Ms. Williams: Yes we want to make [Town Name] better, but what's the better way of saying that?

Joanne: Improve it.

Robert: Expand it.

Ms. Williams: The "E" word. What class are we in?

Robert: Economics.

Ms. Williams: Okay, now the "D" word? Economic? What does it mean if industries come into [Town Name]? Economic development. So, like the [Memorial and Recreational Park Names] are things in our community that we can all enjoy. What is on the left going to [Nearby Town Name]? What's that supposed to be?

Robert: Armory.

Ms. Williams: The new armory is going in. What else? There are rumors that a Kroger is going in. A place where people can go and spend money, but we have to attract businesses first. Okay, let's look at [Candidate 1 Name]. I'll read so you can write in your little blocks.

Ms. Williams read the article about one of the candidates and periodically stopped to interject questions and model her thinking about how to choose a political candidate, a citizenship skill that she believed students would need as adults.

Ms. Williams: Does anyone care that he graduated from Langley High School? I can only vote for one of six people, so what if they all say the same thing? I'm thinking because he went to this high school, he might still care about it.

Mike: Just because he knows this place, doesn't mean he cares about it.

Ms. Williams: You're exactly right, but let's put Langley High School in his box anyway, since he might care more since he graduated from here. Just something to consider, but I'm not telling you to vote based on that, though. (continues reading) So he's worked for a local bank for 20 years, and I'm thinking that if he'd embezzled money or something else unethical, he probably wouldn't have worked there so long. It says he's also into income-producing properties, so does he understand how to attract new jobs to our area? Isn't that what you want? More jobs means more taxes are paid. Don't you want new laptops for our school? If we had more businesses and more corporate taxes paid, maybe we'd have more things to make it easier for you to learn. (continues reading) Why do we care about the retirement community that just went in behind the hospital? Anyone ever go to [Nearby City] or [Nearby City] to shop or do you all stay in [Town Name]? I've heard some of you say you've driven all the way to [State Capital]. I would say if we're encouraging old people to live here, they're less likely to go shopping in [State Capital], so they're more likely to stay here and spend their money here. (continues reading) He says about our relationship to the county government: 'If they do well, we do well. If we do well, they do well.' Is that a good philosophy? We should encourage our town to work together, right? (continues reading) He's been attending school board meetings for the last few years, so do you think he cares about the schools? How many of you or your parents have been to school board meetings?

Steve (under his breath): I've been to a lot.

Ms. Williams: I'm not going to respond to that, Steve, but let's just say I'm not talking about disciplinary hearings. Anything else in the article that makes you think he will be a good candidate? You might write something in the box then later mark it off, which is okay. And don't just decide [Candidate 4 Name] is a good candidate just because he was one of your [Middle School Name] teachers. How often do you think elections are a popularity contest?

Janet: Lots of the time by ignorant people.

Ms. Williams: Oh, that's scary thought that ignorant people are making important decisions. And I'm not using 'ignorant' as a bad word but rather just to say that they haven't worked to be educated and informed. You don't want to leave this class being uninformed. We should be discussing things and sharing things in this

> class so we can be informed. So, don't shouldn't just skim the articles and decide on a candidate even though that's what we do sometimes. You never know if who we elect will move onto a state position someday and turnout to be a really bad politician. You don't want to think that you got him started because you didn't take the time to read carefully and become better informed. Okay, so fill out the rest of your boxes and then select the four best candidates by circling their names.

After students work independently for about 20 minutes, Ms. Williams announced that she wanted to know which four candidates received the most student "votes" and called out the six candidates names then recorded the number of students' hands raised in each candidate's box on the board.

> Ms. Williams: Whew, this is close. We were all reading the exact same information, right? Why would we all vote differently then? Some of us may have brought different knowledge to the table…So if were reading same information and use the same criteria, why did we not vote for same people?
>
> Joanne: Personal tastes.
>
> Ms. Williams: We must have incorporated personal tastes. Caitlin and Robert both know more than one candidate, but again, just knowing someone is not a criterion. But maybe it's a reason not to vote for somebody. (laughs) What were we looking for again? (Ms. Williams reviews the three criteria listed on the board) Even if we graduate from Langley High School and get out of [Town Name], we're still always going to be from [Town Name], so you want us to have as good a reputation as possible to carry forward with you…I want us to think about making decisions like this and how it will be influencing our community. Robert, as a small business owner, you especially since [Candidate 1 Name] talks about business taxes. We care about our tax situation. Kerry, who did you pick and why?
>
> Kerry: [Candidate 5 Name] because my parents know him.
>
> Ms. Williams: Kerry brought up how we make decisions sometimes based on our parents knowing them. That's a reason we want to be in this class because sometimes parents don't always know best. No offense to your parents, Kerry. I know they make great decisions. I always told my son to listen to me because I

> know best. (laughs) But, at some point you have to develop your own criteria for making your own decisions and reasons for deciding that way. Allen, who did you pick and why?
>
> Allen: [Candidate 3 Name] because he is seeking reelection, so he has done it before.
>
> Ms. Williams: Okay, so you know he has experience, so he knows what he's doing.
>
> France: I don't know because [Candidate 4 Name] knows us from [Middle School Name], so he knows what we want and need.
>
> Ms. Williams: Good point, Joanne. So maybe that's how you make your decision.

As this lesson demonstrated, Ms. Williams taught students about their personal responsibility of casting informed votes by modeling basic economic decision making skills and connecting a seemingly unrelated town election to the personal lives of students and the well-being of the community at large.

Understanding current events. All three teachers emphasized the need to incorporate current events into their economic instructional practices, as essential preparation for adult citizenship. As Ms. Levitt put it, "I think current events are crucial to teach in economics. You can't separate the two. If you separate it, it becomes a boring class...You can't teach anything in economics without teaching current events." Similarly, Ms. Miller claimed,

> I think I could not teach [economics] without bringing in current events… Because you can have all of the concepts in the world and play all of the games and do all the stuff that you're going to do, but if they can't relate it with what's happening today, then it makes no sense to them and it's useless information…Okay, so I know what a supply and demand curve is—whooptedo.

> You've got to know how to make it so they see how that relates to them, and if not today, then five years down the road, 10 years down the road. We're already talking about social security. How they're changing it…You think that's so far down the line that it's never going to affect me but we know how fast time goes. Then I bring in, talk to your grandparents. Talk to your parents. Find out how they feel about this stuff. This is actually happening in their lives. So to me, the whole concept of current events is economics.

Nonetheless, each teacher had a slightly different approach to incorporating current events into their instruction. In connection with the Stock Market Game™ played by Ms. Williams' class, students turned in weekly summaries of articles they found in the *Wall Street Journal* that directly impacted the stock prices in their investment portfolios. The article contents also had to be discussed in terms of how it directly impacted students' lives. At least weekly, Ms. Williams brought in local, state, and national news and helped students understand how everything eventually trickled back to them in big and small ways. In reference to the importance of moving beyond local news, Ms. Williams stated,

> I think we need to be sure we're at a national level because it's really easy to make what's going on in your city applicable to you. Then when you go to the state, and it's things that are going on in big cities and you're in a small city, it's really easy for them to dismiss it and think 'Oh, that doesn't have anything to do with us.' Anything that's going on in the state has to do with us because if it's state funded, it's going to affect how much money is coming to us.

What follows is a typical way in which Ms. Williams included current events in her instruction by asking students to share their weekly current events summary:

Ms. Williams: Who is ready to share? Let's do a few of these. Not everybody.

Robert: I'll go, but mine is pretty crappy. I read about China trying to clean up their air.

Ms. Williams: What companies will be impacted? That is very interesting because we've been talking about the environment.

Robert: Coal companies.

Ms. Williams: What will be the impact in terms of your stocks?

Robert: It will drop the price of my coal stocks.

Ms. Williams: Will it affect us in the U.S.?

Robert: Yes.

Ms. Williams: Everybody needs to see how it always comes back to the U.S. Okay, Mike?

Mike: (reads his summary about the NFL article he found regarding domestic abuse, but nobody could hear him)

Ms. Williams (takes Mike's paper and rereads highlights): Mike used his inside voice, but he said some fabulous things. He talked about the NFL players, and unless you've lived under a rock, you know there have been some poor choices that these athletes have made, beating on their wives and children. And now the Radisson has suspended the NFL use of their hotels. Is that good or bad?

Joanne: Bad.

Ms. Williams: The NFL teams won't get as much money from sponsors either, so the team will lose money for the operation of their business. Who are we going to be watching to see how they spend a huge amount of money? It's been all over the news, and we even heard about it over the morning announcements today?

Janet: ALS.

Ms. Williams: Yes, ALS. Millions of dollars have come in for ALS. We've even collected money here at Langley High School. Back to Mike's article, Adriane Peterson makes $600,000 a week, and he's still getting paid for not working. Is that a problem, Robert? (Robert nods his head yes) I have a problem

with that. Not working and still getting paid. Mike did a good job in his response stating the problem, discussing the solution in terms of pro's and con's, and then giving his opinion. That's what you need to do. This is taking ownership of your reading. There's a debate that some people say they're getting paid to play football, and so their personal life shouldn't matter. People are divided on the issue.

Joanne: Looking all the way back to high school years is dumb.

Ms. Williams: Who makes a lot of money off these players? Look at what Allen has on today. What could be on the back of it? (walks over to Allen and points to Langley High School football jersey) Retailers are pulling jerseys and other things from their stores. The people who make those jerseys are losing money. Joanne, do you want your little brother wearing a jersey with somebody's name on it who beats people? (Joanne nods no) You want to think about our goals as Americans. We don't want people fighting. We want a home, boat, 2.5 children, apple pie, and people who love their children and wives. This is all defeating the American goal of being the perfect society. (laughs)

Joanne: Yeah, but I got spanked all the time in public because I was a bratty child.

Robert: If I had a child like me, I'd spank him, too.

Ms. Williams: It's a hard decision because people are on either side of the fence. Years ago when I was growing up, spanking was just something you did. It just was. Okay, who else wants to share?

Joanne: I will. Mine is about the new iPhone that came out and is behind the eight ball, so the stock will likely go down.

Ms. Williams: Yes, I imagine that the commercials you see on TV about the new iPhones are going to increase now, too. There's a big article about Alibaba in the *Wall Street Journal* today. BABA is the ticker symbol. This company broke into the U.S. market today with an IPO and is trading for about $200 a share.

Robert: What kind of company is it?

Ms. Williams: Good question. We always need to know what industry it's in. How many of us have shopped online? All of us, right? This is an online shopping company. When something new comes out, like when we see a new restaurant that opens in town, aren't we excited to see it? By the way, there's an

old business that's reopening in town after closing for several years. It's going to be bigger and better.

Kerry: Fishers.

Ms. Williams: Yes, Fishers.

In keeping with her business background, Ms. Williams commonly related students' current event assignments to the economic activity of businesses and the consequential influence on stock prices while also making local connections for students, regardless of the formal economic content she was teaching that week. Ms. Williams also attempted to develop students into critically minded citizens by analyzing economic events in the news.

On the other hand, Ms. Levitt believed that all current events, whether ones students find and summarize or ones she discusses in class, needed "to be geared towards whatever we are studying at that time because you can get off on so many tangents and not accomplish anything." This strategy also assisted Ms. Levitt in determining if students actually understood the economic concepts she was teaching and could articulate how the economic event impacted their lives. If there is an important current event that might be too difficult for students that Ms. Levitt wanted her students to read, she would create a list of questions for students to answer in order to scaffold their understanding and to help them think more critically about the economic content. To reinforce her English department's emphasis on active reading, Ms. Levitt's students also practiced annotating economic articles that they found. On occasion, Ms. Levitt would allow students to find anything in the news that was interesting to them as long as they were

able to make an economic connection. During the mid-interview, she used the recent NFL scandal about the New England Patriots using deflated footballs as an example to describe how she was able to help students make economic connections with just about anything they could find in the news:

> We talked today about how that [scandal] could possibly impact the Super Bowl and, financially speaking, how it could affect or impact businesses because maybe people will say 'Well, the patriots are cheaters.' And some of the kids said, 'Well, some of the people might not want to buy their sweatshirts and their t-shirts, and people are going to lose money who are selling those because of that.' They asked, 'What if they get banned from the Super Bowl? All these things have been printed up for the Super Bowl with the Patriots' name on it. Now, the value has gone down tremendously'…Another student said, 'Yeah, but the value might go up because it's the Super Bowl that never happened.'

As another example of how Ms. Levitt connected economics to seemingly unrelated current events, Ms. Levitt started a class by talking about the recent Ebola scare, which eventually transitioned into a review of her instruction on *supply* and *demand* the previous day:

> Ms. Levitt: All my classes want to talk about is Ebola lately. Every time they come to class, somebody asks if we can talk about Ebola today. It's getting super interesting because we can make all kinds of economic connections, such as the effects on our economy and society. Next week we're going to look at two articles, one global and one local, about the effects Ebola is having on chocolate. We will also be making connections to determinants of supply and demand. Did you all hear about the latest person who flew on an airplane and told them that she had a fever, but the plane crew determined it wasn't high enough to quarantine her? Then that same plane flew to five other destinations that same day. Since she had come down with Ebola, they had to sterilize the entire plane. They have also decided to put 76 other healthcare providers on the no-fly list. The kids on those flights have also shut down day care centers. How does that affect our workers?

Ken: They don't get paid.

Ms. Levitt: Right, and if you're the mother or father of a child in those day care centers that shut down, what do you do for child care? What happens to productivity? This is all just the tip of the iceberg of what Ebola could to do to our economy. At one point, the Dow Jones dropped 500 points yesterday, which is a huge drop, and goes to show people are scared about what's going on in the economy. They are saying that Ebola is impacting people's decisions in terms of savings and investing. The Ebola scare is also an international scare. So, Ebola is a medical condition that has the potential to disrupt economic activity. We will be looking at that from global and domestic perspectives next week as well as how economically it can impact states and countries and even us here locally.

Paul: So what about Ebola and chocolate?

Ms. Levitt: It's affecting cocoa beans. Do you know where most cocoa beans come from? Africa.

Paul: That's really bad news because I can't go without chocolate!

Ms. Levitt: You and me both. The Hershey companies are trying to help by financing people to go to the Ivory Coast and Ghana to work. The price of cocoa beans had already gone up 8 percent before the scare. So it could affect our personal pockets because it could cause the price to go up on anything that uses cocoa beans and chocolate including things like coffee and pastries. Everything is controlled by supply and demand. So, let's review, what do we call what consumers want?

Jackie: Demand.

Ms. Levitt: What producers put out is called?

Ken: Supply.

Ms. Levitt: A monetary *incentive* called *price* determines how much consumers will pay and producers will supply. We have to come to a place of harmony (makes meditation sound) in the marketplace which is our notes for today. They are super simple notes. Our goal is to get as easy and simplified as possible.

This class exchange served as a salient example of how these three teachers linked their economic instruction to current events as well as how students were taking an interest in

discussing current events. If fact, related to the healthcare industry, I overheard Tim in Ms. Levitt's class tell students around him that he read an article about robots being used in hospitals and Zane, who rarely completed his classwork or contributed to class conversations, told the boy beside him that he read that there was a new treatment for AIDS.

Two class periods later, Ms. Levitt gave students a copy of two news articles about the impact of Ebola on a local chocolate producer and a global chocolate company. Further economic connections were made as Ms. Levitt modeled her economic thinking about the two current events in terms of which *supply and demand determinants* would be in play based on the previous day's lesson:

> Ms. Levitt: Let me read the news headline: 'Nestle, Hershey help fight Eboli' What's the first thing that jumps out as an economic connection just by reading the headline?
>
> Piers: They're concerned about their supply of what they will put in the market for the consumer.
>
> Ms. Levitt: Yes, so without even reading the article, we can determine number one, an economic connection and number two, whether it will affect supply or demand or both. I am going to read the article to you, and I want you to tell me which supply [determinant] pops up in the article, so keep your graphic organizer of supply [determinants] in front of you. (reads brief article about global chocolate producers)
>
> Ms. Levitt: So, globally we see Ebola is affecting who?
>
> Ken: Us.
>
> Ms. Levitt: Us, the consumers. The byline could be something like: 'Closed borders affect migrant workers who cross the border to harvest cocoa beans.' Would that increase or decrease the supply of cocoa beans?

Ken: Decrease.

Ms. Levitt: Debbie, which determinant specifically is affecting supply? Look at your notes. There are six of them.

Debbie: Natural disaster.

Ms. Levitt: Yes, natural disaster. Why is Nestle so concerned about this?

Ken: They make chocolate, and the main ingredient is cocoa beans.

Ms. Levitt: The people who are harvesting the beans can't go to work because the borders are shut off. Migrant workers move from place to place to work. If the borders are shutdown, how will they get workers? What did the article say is an option if they can't get the workers? Sally?

Sally: Raise the price.

Ms. Levitt: What else can they do? Zane?

Zane: Use a filler.

Ms. Levitt: They could use a filler, but that would be a very bad day! And we're already looking at price increases. So you understand that you can take any article and make economic connections. Whenever the government makes a decision or regulation, keep in mind that it wasn't the cocoa farmers who decided to close the borders, it can affect individual people, groups, and businesses. The intent of the decision is good to keep Ebola virus from spreading, but there's also a negative effect. If Ebola wipes out a lot of people in the African countries, there will be less workers then, too. So that's an example of a global economic connection of a consumer good that we all purchase. Have you been to the new chocolate store downtown? The owner of the store was interviewed and asked if he's concerned about passing the increased chocolate prices onto his consumers. (reads brief article about local chocolate producer)

Ms. Levitt: He's saying the natural disaster [supply] determinant will affect cocoa beans, too. Does he think he will see the pinch for his local business?

Debbie: No, he gets his beans from South America.

Ms. Levitt: Yes, but where else are the companies getting their beans if they can't get them from Africa? Madagascar and the Caribbean, right? What will that do to the African supply?

Paul: It could eventually put them out of business if everybody starts getting the beans from other places.

Ms. Levitt: Right, so he is still affecting the supply chain all around the world, right?

Ms. Levitt was also skilled at making personal economic connections to events happening at school, such as the bomb threat that was received at the school, requiring students to evacuate the building for about four hours in the heat of summer. Foreshadowing the economic concept of *fiscal policy* and incorporating the EWT, the local current event exchange went as follows:

Ms. Levitt: Have y'all heard anything about who called the bomb threat in? You know, it's a felony and it costs [School District Name] thousands of dollars. It costs $12,000 for each sweep, and the county is already strapped for money. Have you ever been to Fairfax County? What are the schools like?

Student: They're really nice.

Ms. Levitt: Yes, they're entirely different facilities, and there are more opportunities because there's more money for schools in that area than when you live in a rural area because of the tax base. So it's even more important that every dollar is used to make your education better. That money to sweep the school has to come from somewhere, and it's our tax money supporting these expenses. We have to pay because some idiot wrote a bomb threat note. The person didn't even spell all the words right, I heard.

Jackie: I think the student should pay for it.

Ms. Levitt: Yes, I think the parents of the student should pay. What did it cost us yesterday?

Jackie: Money.

Ms. Levitt: Yes, it costs money to search for an explosive. What else did it cost?

Tim: Time in this class.

> Ms. Levitt: For some, it was a health cost in the heat. One girl passed out. Let's put ourselves in shoes of the police. They have to sweep the building twice in a certain amount of time. They have to check every corner, cabinet, locker. Everything was searched and not put back in order because they have to do it in a certain amount of time. They also had dogs in here. They are putting their lives on the line, hoping and praying a bomb doesn't go off. Our administrators have to be with them, too. Do you think parents should be held responsible when minors make decisions like that?
>
> Students: (a few students nod yes)
>
> Ms. Levitt: Who should take responsibility for things they do? It's a hard call because parents could be doing the right things in raising their kids. The person who did it should be thinking that they should take this class and learn to make better decisions. There were unintended consequences yesterday, too, with the girl who passed out from the heat. We have diabetic students, too, who needed their insulin. I got so hot and sweaty that I had to go home and take a shower before volleyball last night.

The teachers' regular inclusion of current events kept their economic instructional practices relevant to students' lives.

Student evidence of understanding current events. In the post-interviews, I asked all three teachers about how confident they were that their students would better understand economic events discussed in the evening news as a direct result of completing their economic class. All of them were confident, and when I asked on what they were basing their confidence, they all pointed to the fact that students were voluntarily bringing up economic news events in class and better articulating their economic opinions. Specifically, Ms. Levitt responded,

> I think it has been a work in progress for sure, particularly seeing that growth just with the recent conversation we had with the State of the Union Address, and the number of my students that watched it without being required to watch it because they knew we were going to discuss it in class. Also, how they were able to form

> opinions based on what they believed, and to be able to convey that to me whether I agreed or anyone else agreed with their opinions. They were able to say, 'This is what I think. This is why I think this. This is why I think this would be best.' They were also able to use economic principles that they've learned and the critical thinking strategies that they've learned to be able to get all that out to me.

Likewise, Ms. Williams told a story about how one of her students who earned a D for her semester grade came in to class and said, "Ms. Williams, you know when mom and I were talking about the State of the Union Address, that was something we talked about in class. She said we ought to come in and talk about it [more]." Ms. Williams said she was really excited to see that her students were having economic conversations at home. Similarly, Ms. Miller said she had students who would say to her, "Guess what I heard on TV last night," or "Hey, I heard such and such and that is what you were talking about." Ms. Miller even had parents tell her that "when they walked in the room, they couldn't believe their child was actually watching the news."

Discussing controversial issues. Including controversial issues in their economic instruction was a source of disagreement among the three teachers, ranging from Ms. Levitt who thought few controversial issues were off limits to Ms. Williams who proceeded with extreme caution when covering controversial issues to Ms. Miller who primarily believed discussing controversial issues in a high school classroom was inappropriate. When asked for specific examples of controversial issues that might push the boundaries of high school instruction, Ms. Levitt initially could not think of a particular topic. She said her school administrators nor school district administrators had ever told teachers that certain topics should not be discussed in class, yet she thought that

most school districts likely had unspoken rules about teachers not having religious conversations with their students and not sharing their political beliefs. Regarding religion, Ms. Levitt recalled an instance two years ago when a negative comment about Mormons was made by a student in the back of the classroom that was overheard by a female Mormon student. Offended, the Mormon student told her mother who called the school to file a complaint. Ms. Levitt was called into the office and assured her administrators that she did not hear the comment and that the only reason Mormonism was being discussed in class was because it was part of a current event that involved an economic concept she was teaching. The economic connection to Mormonism appeased her administrators. To delve deeper, I asked if she had discussed the recent Ferguson riots to which she responded,

> I covered Ferguson economically. As long as I can come at it with an economic point of view, then I'm not bringing up something racial. I'm bringing up the economic impact of what happened in that situation. That's how I try to approach it.

Moreover, Ms. Levitt said that teachers needed to "know [their] kids, and they have to know where the pulses are in that classroom to know what that particular room can handle." That is, whether certain controversial issues were brought up in class depended on the students' maturity level. She concluded by saying,

> I think it doesn't matter what subject you teach, there's going to be controversial issues. But it's your perception of how you are going to handle the controversial issues. I think as a teacher you have to stand back and let the kids have the conversation, and you can be sorta like the devil's advocate for it. You can take the other side of why you think this should happen or not happen.

Like Ms. Levitt, Ms. Williams said she never heard her administration say anything about what topics teachers should avoid discussing in class, but she thought there were unwritten rules about teachers not imposing their opinions on students. She thought this because "teachers get called to the office all the time." When I asked why she thought so many teachers are being called to the office, she said,

> Because of our culture that now thinks kids can do no wrong and in rural areas where kids think like their parents and grandparents, you can't say anything contrary or else they get offended or shutdown. You can't argue against their family's mentality.

Therefore, she was extra careful to teach in a way "so that no one can ever say, 'I imposed my baggage on them'" and that,

> If a parent accused me of that, I can say, 'No, that's absolutely not what I did.' I might tell them what my stance is or from the way I present things for them to know what side of the table I'm on, but I'm very careful. I want them to decide for themselves because they need to be self-thinkers. They don't just need to be rethinking. That's not what economics is about. It's about us being able to make the decisions ourselves.

If Ms. Williams did share her opinions, which she tried to do only on rare occasions, she felt she was justified because she was simply modeling for students how to come to their own conclusions: "I think that's part of the lesson. Then, I can explain why I stand there. You need to be able to defend, 'This is where I stand and why I stand there.'" This was a life skill that Ms. Williams thought was important for critically minded citizenship. Although, Ms. Williams preferred to only discuss a controversial issue after a student brought it up in class:

> I don't think there are any [issues] that are too political or too controversial. I think that you need to discuss anything that's going on because you're doing them a disservice if you need to avoid something. You might decide that you can't go but so far on a topic because it's getting out of control and…like this disability thing we've been talking about, you don't know what baggage people are bringing to the table. But as long as one of them is bringing it up…like that one student [today], I knew that story, but I couldn't bring it up. But the fact that she wanted to bring that up, then we could [discuss it], which was fabulous.

Playing it safe was Ms. Williams' preferred instructional practice, which she did by strategically leading students through her questions and comments to bring up controversial issues rather than her bringing them up. After class one day, she told me,

> I lead them into what I need them to say or else I run the risk of looking discriminatory. It's good when another class says answers that I can share with students. I get students to say what I need them to. I do not play the devil's advocate because so many people are sensitive…I am more a leader of student comments than an arguer. Students aren't always paying close attention, so they only hear every third word sometimes, which is how things get taken out of context. If I am called to the office, I can always say a student said XYZ. Between both schools, I've had students say things I never said. You lead me, I don't lead you.

Consistent with the other two teachers, Ms. Miller said she had never been given any guidelines about discussing controversial issues in class. In fact, she said the administration knows she covers issues like minimum wage and outsourcing, which she thought might be considered controversial to some students, when she conducted classroom debates because she typically invited the principal to serve as a debate moderator and evaluator. However, in contrast to the other two teachers, Ms. Miller intentionally steered clear of controversial issues regarding homosexuality, religion, and political parties. She explained,

> Yes, I think there are some things we should avoid. Like Virginia now saying that homosexuals can get married. I know that there are some kids who would just love to talk about that in class. That is too controversial for a high school classroom. Even though it's becoming part of our government now, is a law, and is going to touch on a lot of this [economic content]…Health benefits like insurance is going to change.

In response to my further questioning about why she avoided discussing traditionally controversial issues as determined by mainstream media, such as gay and lesbian rights, she shared,

> I think it would be wonderful to bring it into a college classroom, but I would never want to bring it in here because there is going to be some very insensitive people in the classroom that are going to say some very derogatory remarks. That even happens with outsourcing. I've had some kids from India, Mexico, and China, and people will, you know, they're just saying what they hear at home. Some of them, bless their little red neck hearts, don't even realize that what they are saying is offensive.

These offensive comments were made, according to Ms. Miller, even after she gave students a "preamble of you have to respect each other's opinions, and this is not a forum for grievances…[These topics are] your responsibility to research and come up with ideas on your own."

Controversial issues instructional practices. During my observation period, I did not observe Ms. Levitt incorporate controversial issues into any substantial class discussions. Based on Ms. Miller's interview comments, she was the teacher most likely to avoid discussing controversial issues in the classroom, as the following instructional practice of reading straight from the textbook illustrated:

> Ms. Miller: Now, let's talk about the unintended consequences of these antipoverty policies, which I'm going to read directly from your book. I try not to read directly from the book, only sparingly, but this section is very well written. Plus, it's a sensitive topic, so we're going to read it straight from the book this time. Turn to page 226 and 227 and find the section called "The Unintended Consequences of Antipoverty Policies." (reads five paragraphs from the textbook)
>
> Ms. Miller (interjects before the last paragraph): When I was in college, or after I graduated from college, one of my first jobs was to teach people on welfare the computer skills they needed to find jobs because the manufacturing plants they had been working at for 10 years had closed down. Most of them didn't have a high school diploma and had no other skills to offer than the ones they had learned on the job. The government gave [County Name] a grant to offer these computer courses to people who had never used a computer. I know you think that's hard to believe, but back then, it wasn't that uncommon. The irony of it was to get people off welfare and get a job, but the government cut the grant shortly thereafter and put them on welfare anyway. So there's a lot to do to fix the system.

In contrast, Ms. Williams collectively spent four class periods discussing entitlement spending and the Ferguson riots from an economic perspective, both of which she considered controversial. In keeping with her belief that she should proceed cautiously while covering controversial issues, below is an illustrative example of how she led students to bring up points she thought were important about entitlement spending but was afraid to share herself:

> Ms. Williams: My husband uses the word 'entitlement' as a bad word when he says 'you're acting entitled,' but what are you entitled to?
>
> Kate: Education.
>
> Robert: Healthcare.
>
> Ms. Williams: Should Ms. Williams be entitled to a paycheck just because I showed up to work? Is it fair that a teacher gets paid whether or not you learn? Can a teacher really control if you learn? I don't think entitlement is really a bad

word, but I think it's turning into one. I saw on TV where Democrats were saying that if you elect a Republican, the first thing to go is the healthcare. Poor little Suzie needs to be on her parent's healthcare plan, but the Republicans are going to repeal everything to do with the healthcare changes. They're telling a sad story and they are drawing on your heartstrings. Robert, if you're making $100,000, three times what beginning teachers make in [County Name], should you still be on my healthcare if I were your mommy?

Robert: Uh, probably not.

Ms. Williams: [County Name] has to pick up that extra cost of me carrying Robert on my healthcare plan, and it's already poor in terms of paying teachers. There should be some things we're entitled to, but with every law, there's always some problems. But you need to listen to these stories they tell you on TV and really think about them before believing them. What else are you entitled to?

Kate: Happiness, but you're not entitled to it if you don't work for it.

Ms. Williams: You should get into a good college because you worked hard and filled out an application. People are starting to think more and more that they're entitled to things without the 'W' word.

Robert: Working.

Ms. Williams: Or what's the 'E' word that's also going to the wayside?

Kate: Earning.

Ms. Williams: I was thinking 'eligible' but I like 'earning' better. I'm going to start using those two words instead—working and earning. I like it. You don't want to be one of those people who gets something for free or without working or earning it. Have you done anything to deserve your entitlements to this point?

Janet: Your parents pay taxes.

Ms. Williams: Okay, and you were born as an American citizen. Have you seen that we're giving our rights to people who weren't born here? What were the two words that were your words just now? (writes on the board 'work' and 'earn') What's something else you're entitled to?

Kate: Unemployment compensation.

Ms. Williams: That's something that you have worked and earned. I don't think someone who has never worked can get unemployment compensation, but I'd have to check to be sure.

Kate: They should be trying to get a job though.

Joanne: There are idiotic people who get disability and don't need it. They just do it to get money.

Ms. Williams: It's crazy, isn't it? You all are coming up with good comments today. I like that word 'idiotic,' but I don't think I can get away with using that. Should the government give you money to live somewhere if you stop paying your mortgage?

Kate: No.

Janet: Yes.

Joanne: Depends on the situation.

Ms. Williams: What would make you absolutely deserve housing from the government? How many of you are disappointed that Langley didn't get laptops this year? Right here is a reason why we don't have funding at our school because 60% of our money is going to entitlement spending.

Joanne: I know somebody who is close to me and who recently relocated and is out of work, getting unemployment. The money is supposed to be enough, but it's not paying their bills, and they don't have enough money to eat.

Ms. Williams: This gets back to the Social Security [worksheet] about how much money it takes to live. So, how much money should the government give me to survive, per month? We should never have a goal to stay on government money, though. Home ownership doesn't have to be everybody's dream. With a house comes responsibility and not everybody wants to work. How much will it take the seniors in here to survive come June when you graduate? This will be a personal finance lesson, but it will tie back into this entitlement lesson.

Ms. Williams listed typically monthly expenses of the board with estimated dollar amounts to give students a basic understanding of how much money is necessary for

daily living expenses. This personal finance lesson would be revisited next semester when students turned their attention to the personal finance portion of the course.

> Ms. Williams (returning back to her entitlement spending lesson): We have to be careful with how much money we're giving away. It's no wonder we can't have laptops, updated desks, or paint the ceiling. The government is giving so much money to people who could and couldn't work. We want to think that there are exceptions to every situation. Getting back to our previous discussion, just because you don't have a job, should the government give you somewhere to live?
>
> Joanne: Depends on the situation.
>
> Janet: If you're unemployed because of a disability.
>
> Ms. Williams: But what's a good excuse? Let's go back to what you were saying, Joanne. They might be trying to convince you that there's something wrong with them. There's a reason lawyers are getting settlements and then you get government money.
>
> Joanne: But some of those people can still work despite getting money.
>
> Janet: I think it's a good idea because at some point you can't keep working with MS, and it's not their fault. While you still can, you should work, though.
>
> Ms. Williams: Ms. Williams' opinion is that there are not good criteria for who gets government money.
>
> Joanne: I have problem with people who get money because they have ADHD. I have it, too, and I'm not getting any money.
>
> Ms. Williams (wrapping things up before the bell rings): Who is the government?
>
> Janet: We are.
>
> Ms. Williams: We need to pay attention to these things in the upcoming election. We don't want people to get stuff that they don't deserve.
>
> Joanne: Yeah, because the people who need the money aren't getting it, and the people who are getting it don't need it.

As this classroom conversation showed, Ms. Williams tried, at times, to deflect her conservative leaning opinions by repeating what her students and even husband said about entitlement spending and convey her opinions by asking leading questions. However, her conservative biases were sometimes still observable, as was the case with her initial comments about healthcare.

In an attempt to bring in multiple perspectives and to require all students to actively participate, especially students who were shy, Ms. Williams started the next class period by telling students to write a story in Microsoft Word about someone they knew or heard about who represented a deserving scenario and undeserving scenario for receiving entitlement benefits. Incorporating English literacy and technology skills, these two scenarios were to include details about the person's age, health, and background. After Ms. Williams instructed students to print and turn in their stories, she began the next activity by saying,

> Ms. Williams: Joanne was telling us a good story about somebody who was getting benefits, but they weren't deserving of disability money… I felt when the bell rang yesterday, we were getting into some ethical issues, and we're all going to see some things differently. So, in deciding who should get benefits, we have to set our ethics and morals aside. How many of you have brown eyes? Blue eyes? How many have eyes? There's got to be some criteria set by the government to determine who gets benefits.

Ms. Williams then told students she downloaded nine case studies from the Internet that described true stories about people who received government benefits based on various life circumstances. Rather than have students agree or disagree with the monetary awards, Ms. Williams instructed students to pick a dollar amount between $100 and

$1,000 to represent how much they thought each person should receive from the government and to list the criteria by which they made their decisions. Students were instructed to pair up with another student with whom they did not know well "because when you sit with your friends, you're likely to think like them, and when you work with someone you don't know, you're more likely to get different perspectives." Ms. Williams also told students that she "wanted there to be disagreement between partners and justification for similar or different conclusions" but to keep in mind that "this is your social security money that you're giving away, or I should say in your case, money your parents will need so they don't move in with you because social security no longer exists."

Because the bell was going to ring in about five minutes, only two pairs of students quickly shared their scenarios with the class. The first scenario was about a 62 year old man who worked as a mining employee for many years and thus had many injuries, limiting his mobility. The second scenario described a 21 year old man with autism who, despite being able to communicate with people, needed help cooking and bathing. Both student pairs awarded each person about $200 less than what was actually awarded by the government and justified their amounts by saying they believed that mining was a hard and dangerous job and that Autism can lead to a low functioning lifestyle. This activity, once again, allowed Ms. Williams to broach an often sensitive issue like entitlement spending in a way that used other people's stories—this time from the Internet—to help students form their own opinions by using a modified version of the PACED decision making model.

Another instructional example of how Ms. Williams cautiously taught controversial issues was when she used an economic lens to discuss the Ferguson riots. To desensitize these recent events, Ms. Williams started class by asking students to think about crime in general and its economic impact. Ms. Williams started class by saying,

> Ms. Williams: Today we're going to be finishing that worksheet from last Wednesday before Thanksgiving and tying it into other things happening in the world. But first, you need to be thinking about what a crime is. You don't need to tell me right now. But we tend to think that some crimes are worse than others. So, for example, going two miles over the speed limit verses killing somebody, which are both considered crimes. Regardless, we should not break the law, and we need to think about the economic impact on us and our community. We always want to take responsibility for our actions, too. (passes out the handout) I want you to take about 10 minutes to fill out the Crime-Economic Impact chart on the handout. Don't do the questions at the bottom yet. Those questions address the economic impact of the Ferguson, Missouri controversy that's been in the news, particularly how it impacted the Black Friday sales of the local businesses.

Ms. Williams allowed students about 10 minutes to fill in the chart by listing examples of crimes on the left side and corresponding ways each crime had an economic impact on the right side. Then she asked students to volunteer their answers, after which the following class conversation ensued:

> Ms. Williams: Crime is good for Ms. Williams. Why? Since my husband [works in law enforcement], when people are bad, my husband works overtime and we get more money. My husband believes that if pot is legalized, there will be more crime and the governor already said we're not hiring more police. So what's that going to do to the response time if you call 911? You better start locking the doors. I want us to take this back to what's been in the news about Ferguson, Missouri. Regardless of your stand on what's happened—we're not getting into a classroom riot, even though I want us all to be passion about something—how is it your right to protest in a way that affects my right as a business owner?

Robert: You should be able to peacefully protest, but I don't think burning down a building is peaceful.

Janet: Yeah, it's not too peaceful when you're rioting and burning businesses down.

Joanne: Black Friday was ruined for that area.

Tim: I'd be really pissed if I owned a business in Ferguson.

Ms. Williams: What was purpose of Black Friday?

Kate: To get people to buy stuff.

Ms. Williams: Yeah, to help your business recover if you didn't have a good first, second, or third quarter. You hope to get a big swoosh now to make up for lost sales. Would you have been mad if you were a consumer in that area?

Janet: Yes, businesses were shut down and consumers couldn't shop.

Ms. Williams: How bad was it for the local economy in Ferguson?

Janet: Really bad because of all the looters, too.

Ms. Williams: What about this idea of tit for tat? Is that an economically sound idea?

Kate (raising her voice): They're doing it to their own people!

Ms. Williams: So we as citizens of a community should be up in arms about somebody tearing up our community, right? What is the economic impact in terms of it trickling back to Virginia, or will it?

Janet: They even had to lockdown some of the schools.

Ms. Williams: Okay and if they have to lockdown schools, say around here, then we all have to tack on days at the end of the year. But, the Ferguson events will indirectly trickle back to us how?

Kate: They have to pay more police to monitor the situation.

Ms. Williams: Yes, as tax paying citizens, whether you are anti-police or pro-police, it costs us much more money to pay police overtime wages. We had

> something like this at [Beach Name] about 25 years ago, and they would take the police force out of the surrounding counties to police [Beach Name] for about two to three years until the riots and unrest settled down.
>
> Janet: The National Guard was there, too.
>
> Kate: They're simplifying things to just a race issue.
>
> Ms. Williams: But some people just like turmoil. How many of you like drama? Some people, maybe yourselves included, just want to fan the flame. Okay, I think we did a good job getting our arms around this issue. We can't allow our freedoms to come back and bite others. Businesses missed a lot of sales in Ferguson.

Ms. Williams attempted to keep her strong pro-police opinions out of the conversation and used an economic perspective to discuss the highly racial riots. However, there were few opportunities for students to express opposing anti-police opinions about police unjustly killing unarmed black males, the main reason that the riots took place according to many people. Ms. Williams told me after class that she tried to get students to present the other side of the controversy. She was surprised that the students who were sharing all held the same perspectives and opinions. Ms. Williams said she was watching Siberia, an African American female student, to detect changes in her body language and thought several times she was going to make a comment, despite Siberia rarely talking in class and completing her work.

Lacking authentic discussions. The three teachers in this study rarely engaged students in authentic discussions as defined as "classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions" (Hadjioannou, 2007, p. 370). In fact, the preceding two class

discussions in Ms. Williams' class about entitlement spending and the Ferguson riots came the closest to meeting the requirement of an authentic discussion. Most of the other verbal exchanges between teachers and students that I observed could be described as "popcorn" question and answer sessions where teachers asked a question and one student offered an answer usually containing one or a few words. Moreover, many questions asked by the teachers were rhetorical in nature for which the teachers did not offer any wait time for students to answer.

To gain a better understanding of why such a lack of authentic discussions was present in my observation data, I asked teachers to explain during the mid-interviews, which for Ms. Williams occurred after school on the day Ms. Williams' students discussed entitlement spending. Ms. Williams described that class discussion as one "that took on a life of its own because we got to the point in which people were so involved in the discussion that instead of me having to tell all those stories, they were telling their own stories." When asked why she thought teachers don't use authentic discussions more often as an instructional practice in their classrooms, she thought the biggest reason was because teachers were afraid to lose control of their classes, especially if the teachers were not confident in the subjects they taught. That is, "you have to stay on task because if you start chasing rabbits, you're going to chase a rabbit that you're not going to be able to catch." Ms. Williams thought that teachers who successfully controlled classroom discussions in economics must be able to either think quickly on their feet based on in-depth content knowledge and teaching experience or be able to admit that they don't know the answer and would have to get back to the students with

the answer the next day. Many teachers, Ms. Williams thought, were not willing to look incompetent in front of their students, especially in economics where she thought few teachers felt like experts.

Regardless of the constraints, Ms. Williams did believe that having authentic discussions was "extremely important" for students to take ownership of economic content in a personal way. Otherwise, students are just "marking the time and drawing curves, hoping their supply and demand graphs go where they are supposed to be." Finally, Ms. Williams thought that having class discussions was a useful way of determining whether or not students were learning the economic content:

> I feel like they are getting it when we are having better discussions. When you are thinking it and can verbalize it immediately, that's even better than putting it on paper, I think, because you have so much more time to process when you're putting it on paper. When you're able to come up with an interchange in a setting and then defend your thoughts, you're ahead.

Ms. Miller thought teachers infrequently engaged students in authentic discussions simply because they were more time consuming and thus interfered with where they needed to be in terms of their instructional pacing guides. This was especially true when students were "way off the mark discussing, and you've got to bring it back around to where it needs to be." However, despite Ms. Miller's uncommon use of authentic discussions, she did feel strongly about providing students such opportunities because "everybody's voice needs to be heard, and everybody's voice needs to be valued." There were some topics such as minimum wage, outsourcing, and labor unions that she was adamant about allowing extra class time to discuss, usually in the form of a

debate, because students in her class had vested interests in those economic topics based on the school and town's demographics.

In agreement with the other two teachers, Ms. Levitt thought authentic class discussions required teachers to have a deep understanding of the economic content and were typically too time consuming. While not a regular occurrence, she did describe a recent example of her students engaging in a "deep discussion" about buying expensive shoes during which she "sat back and never said a word and there was a 10 minute conversation about it between the students." To sum up the students' conversation and to move on to the lesson objectives of the day, she used the students' comments to review the economic meaning of *substitute goods* and Adam Smith's concept of *self-interest*.

Economic Reasoning

The *Voluntary National Content Standards in Economics* (CEE, 2010) contains both concept-based and skills-based economic content recommended for high school students. Most state standards are based on these national standards. However, there continues to be debate among economic educators and scholars about the amount of class time teachers should devote to economic skills-based instruction. Some economic education scholars suggest that teaching students to engage in economic reasoning is an important citizenship skill (Wentworth & Schug, 1993). Nevertheless, the state standards that guided the instruction of the teachers in this study required students to engage in economic reasoning using the following reasoning tools or models unique to the study of economics: EWT principles, cost-benefit analysis chart, PACED decision making model, supply and demand graphs, and production possibilities frontier graphs. In keeping with

their personal orientations toward economics as discussed in a previous section (i.e., beliefs about economic instructional practices and goals), the teachers' use of economic reasoning tools consistently emphasized skills-based economic content relevant to students' lives as citizens and soon-to-be adults.

Economic way of thinking (EWT) principles. All three teachers believed that teaching students to apply basic economic principles—that is, the EWT—was important and served as the foundation of the course. However, Ms. Levitt appeared to be more adamant about it than the other two teachers, as she succinctly stated,

> I would say the most important thing is teaching them or helping them understand the EWT because that's the foundation of it all. I would say that's the most important because that's the root of it all.

Ms. Levitt went on to explain why:

> You can't teach economics without [the EWT], that's just my personal belief because I can't just come in here and say economics is the study of peoples choices and then I go, so let's talk about supply and demand. If it's about choices, how do they make the choice? Why do they make the choice? What happens when they make the choice? Who's affected by the choice? They have to understand that's how we think or why we think that way. So if they understand how [the EWT] works, then I feel like they better understand what economics is really about.

While Ms. Levitt explicitly refers to the EWT principles throughout the entire course, Ms. Miller, who thought the EWT principles were "interwoven…like a rug" throughout all of the economic content, referred back to them more conceptually rather than verbatim after her students passed the EWT test. Specifically, she said, "I will still be coming back

to these [principles] because they follow through with everything…and students have to see that there is a connection." Similarly, Ms. Williams said she tended to talk about the EWT principles in a more "global" sense for the remainder of the course after formally introducing them at the beginning of the year.

While typically similar, the EWT principles vary among instructional resources, depending on the author's preferences. For example, the CEE endorses the following six principles, which they call the "Handy Dandy Guide":

1. People choose.
2. People's choices involve costs.
3. People respond to incentives in predictable ways.
4. Economic systems influence individual choices and incentives.
5. People gain when they trade voluntarily.
6. People's choices have consequences that lie in the future.

This version of the EWT principles was used by Ms. Williams, while Ms. Levitt and Ms. Miller used the seven principles contained in the textbook entitled *Econ Alive! The Power to Choose*, authored by VanFossen (2010) and published by Teachers' Curriculum Institute. A slight deviation from the CEE's version of the EWT, these seven principles were featured in the first chapter of the textbook:

1. Scarcity forces trade-offs.
2. Cost versus benefits.
3. Thinking at the margin.
4. Incentives matter.

5. Trade makes people better off.

6. Markets coordinate trade.

7. Future consequences count.

Despite the differences in principles and related instructional practices, all three teachers had specific advice on how to help students understand and apply the EWT principles, which they agreed required showing students multiple applications of the principles and providing ample opportunities to practice using them. This advice was congruent with the teachers' personal orientations toward economics with regard to economic skills-based instruction and student relevance. Ms. Levitt stated the following about the EWT principles,

> They are simple by themselves, but when you put it together and you want them to see a picture, it's more difficult. I think they need more time to process it…[rather than just] regurgitate principles one through six…Regurgitating it doesn't mean anything to them. They needed more practice…They needed more application. I would say it takes several weeks of talking about it, reviewing it, giving examples, [and them giving] me examples. What does it look like to you? This is what it looks like to me. It takes several weeks of that for them to kind of hammer it in. And then it's a constant reminder of choices. Well, why did you make that choice? A constant reminder of why is that country doing that? What lead them to make that choice? What was existing before the choice was made? Predict the long term consequence of that. What could possibly be the outcome of that choice?...I make them break [the EWT principles] down so they can see it. I model for them personal choices using economic thinking…I model things at home like cleaning your room versus going out with your friends. Everyday you're making economic choices. That's all going back to the very beginning of the year. So it's really reinforced all year long, but it takes a couple of weeks to sink in.

Similarly, Ms. Levitt suggested that teachers need to explain the EWT principles "in terms they can relate to," which she said was hard to do sometimes in a class of students

from all four high school grade levels because they have had different life experiences. However, all three teachers used the EWT as one way to meet their overarching instructional goal of developing students into critically-minded citizens.

In terms of the EWT principles with which students struggle the most, Ms. Levitt and Ms. Miller thought students struggled the most with the economic principle of *markets coordinate trade* because, according to Ms. Levitt, "to them, that's not tangible." Ms. Williams thought her teenagers had a hard time understanding the principle of *people's choices involve costs*. She elaborated, "I don't think teenagers inherently get that all choices involve costs. That's something we've struggled with. This is going to be your choice, so what is going to be your cost. I think they can't take that full circle."

During the first week of school, Ms. Williams introduced students to the EWT by giving a homework assignment that she said was designed to "start students thinking" about the EWT to which they could easily relate. See Appendix P. Titled "The Boring School Mystery," students were tasked with applying the EWT principles to explain the economic "mystery" of why most students graduate from high school despite most of them thinking school is boring. After differentiating a set of mystery "clues" based on reasons to stay in school or drop out of school, students answered a series of questions about staying in school versus dropping out using the EWT principles. Sample questions grounded in CEE's six EWT principles included:

- What is an incentive for staying in school? (Principle 3)
- How does the American economic system encourage people to graduate from high school? (Principle 4)

- What are the future consequences of a decision to drop out of school or stay in school? (Principle 6)

This activity was discussed the next day in class and was in keeping with Ms. Williams' more global and less explicit coverage of the EWT principles. Integrating economics and science (i.e., multidisciplinary horizon content knowledge), another such example included a class activity that involved Ms. Williams' students interpreting six political cartoons about environmental economics by combining the EWT principles with environmental reasoning principles. Students matched each cartoon with one of six captions that combined the economic and environmental reasoning principles. For example, the cartoon in Figure 2 below was matched with the caption "Private property ownership can provide strong incentives for solving environmental problems."

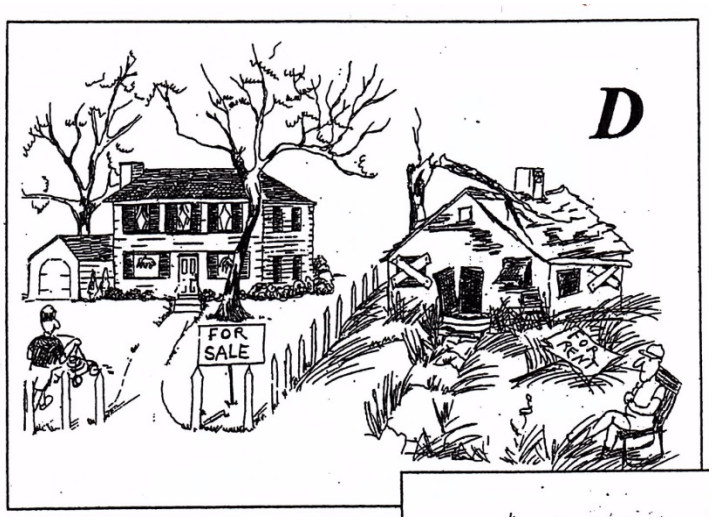

Figure 2. Economic and Environmental Reasoning Cartoon Used by Ms. Williams.

About three weeks into the school year after Ms. Levitt's students took their first test on basic economic concepts, students were given a chart to complete by describing in their own words the EWT principles on the left side and then drawing a corresponding picture for each principle that helped them better remember it on the right side. With about 10 minutes remaining in class, Ms. Levitt began discussing the first principle (i.e., *people choose*), as the following excerpt illustrated:

> Ms. Levitt: If you don't understand how economics works and how it affects you personally, you won't be able to make the best financial decisions. You need to know how to apply the EWT to make the best decisions about money, careers, and life. Let's start by you writing "Everything I need to know about life I learned in economics" on the top of your handout. (Ms. Levitt also writes the sentence on the board) Think about a choice you made recently. When you made that choice, did you have options? Did the choice turn out like you wanted? Were their consequences to that choice? Are consequences good or bad? It can be both. What influences us to make choices?
>
> Students (randomly): Peers…Religion…Morals…Ethnicities…Situations…Media
> Ms. Levitt: We are going to use the EWT to think decisions through better. Every choice you make has an economic connection. Whether you eat lunch today or not has an economic cost in terms of money and time. Principle number one: people choose. Write on your chart: 'We can't have everything we want = unlimited wants' and 'There is not enough time, space, or money (all economic resources) = limited resources.' (Ms. Levitt writes on the board as she dictates) Now, you have 20 seconds to write on the back of your paper everything you want to have.
>
> Students: (list things they want on their papers)
>
> Ms. Levitt: How many wrote down more than 5? (about half of the students raise their hands) More than 10? (only a few students raise their hands) What if I had given you 10 minutes to write? Bottom line, we have unlimited wants. As for limited resources, what if I was invited to three parties which all start at 7:00 on Saturday night? Time is limited, right? Or, how much shelf space is available for a producer to display a product? Or, how many of you have a bedroom to fit five queen sized beds in there? Space is limited sometimes, too, right? Every day you

have to make decisions because you have unlimited wants and limited economic resources.

After discussing each of the EWT principles and giving numerous everyday examples for each, Ms. Levitt and Ms. Williams told students they would be watching the movie *Willy Wonka and the Chocolate Factory* using their newfound economic point of view. Most of the students in both classes had already seen the movie, so students practiced applying the EWT principles to a common, familiar context. Students were instructed to list as many movie examples of each principle as they could. For example, one of Ms. Miller's students talked about the *people choose* principle by saying Charlie choose to buy several candy bars despite his family's scarcity of money because his perceived benefit of possibly winning a golden ticket outweighed his perceived cost of spending his limited money.

Cost-benefit analysis charts. At the heart of the first principle in the EWT—*people choose*—lies another economic reasoning tool called the cost-benefit analysis. That is, people make decisions according to their benefits outweighing their costs. For most people, this cost-benefit analysis thinking process occurs naturally each time a decision is made without formally drawing a T-chart where costs are listed on the left side and benefits are listed on the right side. However, to be used as a reasoning tool in economics where content and policy decisions are often complex in nature, requiring students to mechanically draw the chart and methodically record their thinking in writing about the costs and benefits of a particular economic decision not only helps students

make more informed choices but gives teachers the opportunity to assess whether students' thinking is accurately based on economic concepts and principles.

During my observation period, I did not observe any of the teachers demonstrating to students how to draw or utilize a cost-benefit analysis chart per se, despite the concept of cost-benefit analyses being implied each time teachers talked about decision making in general. Ms. Williams was the only teacher I observed who actually verbally used a modified form of the cost-benefit analyses when she discussed the "advantages" and "disadvantages" of market and command economies and making life choices such as buying a car and attending college. Additionally, in their simulated roles as small business advisors, students were required to list the advantages and disadvantages of their choices when recommending which business structure (e.g., sole proprietorship, partnership, or franchise) their clients should adopt based on a business startup scenario. On another occasion, Ms. Williams wrote the words "advantages" and "disadvantages" on the board while discussing the economic costs of police shutting down the street where the majority of the Ferguson protesting took place. I also observed Ms. Levitt defining the words "cost" and "benefit" after verbally walking students through the costs and benefits of paying front row ticket prices for seats at a Tim McGraw country music concert—a concert most students said they were interested in attending—versus ticket prices for seats further away from the performance stage.

Because I may have missed cost-benefit analysis instruction due to my nonconsecutive observation schedule, I asked teachers during the post-interview if they ever used a more formalized method of teaching students about cost-benefit analysis as

an economic reasoning tool—that is, drawing the T-chart and listing costs and benefits on either side of the chart. Ms. Levitt said she typically did so when discussing major life decisions that her students make such as going to college. She recalled an instance where she drew a cost-benefit analysis chart on a napkin once for a student with whom she was talking while having dinner at a restaurant. Ms. Miller responded by saying she covered cost-benefit analysis more in-depth when she covered the personal finance content of the course at which point she required students to draw the chart to reveal their thinking about renting versus buying a house, for example. Ms. Williams said she tied in the concept of cost-benefit analysis when she taught students about decision making and opportunity costs.

PACED decision making models. In contrast to using the cost-benefit analysis chart, all three teachers used the PACED decision making model or a variation of it at least once while I observed or that they told me about in an interview or in passing. The most formalized in her coverage of this economic reasoning tool, Ms. Williams used the PACED decision making model twice. The first time entailed Ms. Williams modeling her thinking about how to help a fictitious student named Maria decide which college she should attend based on her personal background. The second time required students to do online research on personal computers that they would hypothetically buy and then filled out the PACED decision making model accordingly. See Appendix Q for a copy of the computer activity.

During the first week of school, Ms. Williams also informally covered the five steps of the PACED decision making model by allowing students to choose which snack

they wanted from the items she brought in (e.g., gum, pretzels, chocolate, and peanuts). Students had to share with the class the criteria by which they made their choice and identify their opportunity cost. When I asked Ms. Williams in the mid-interview why she did not formally use the PACED decision making model to assist students in choosing a town council candidate, the learning objective of another lesson, she said that she did not think they had enough class time and felt students already had a good enough foundation of the model based on her instruction on how to choose a college and laptop. However, she did reiterate the importance of students formally using the model and writing down their thoughts, at least initially, so that students would have information to work with once they reached the evaluation and decision making steps (i.e., step four and step five) of the five-step process.

In the same way, Ms. Levitt was also a proponent of students formally using the PACED decision making model and teachers modeling their usage because,

> They do it already mentally in their heads. When they put it down on paper, then they get the visual of what they are doing in their decision making. So not only do I model how they need to use it, but I model how I use it…I think that's a really important tool for them to use in making decisions, and I think if you can put something in a picture form, it helps them visualize it, [which] is important for them in terms of understanding economic concepts.

During the first week of school, Ms. Levitt divided students into groups of three or four students and told students they needed to plan a dance for their school based on a specified dollar amount. Students had to choose among several alternatives when selecting the music, location, and refreshments as well as to which school or community

project they wanted to donate the unspent money. While student groups did not have to use the formal PACED decision making model, they did have to explain why they choose certain alternatives when Ms. Levitt asked each group to share their decisions with the class.

Like the other two teachers, using the PACED decision making model was extremely important to Ms. Miller in an economic class that emphasized critical thinking and skills-based economic instruction in preparation for adult and citizen roles. However, when Ms. Miller taught students how to use the model, she added a sixth step which she called "review":

> I always add an 'R' to the end of it for 'review.' I don't know why they didn't originally do that because…you need to go back and see, was this a smart decision? Would I do this again? How would I change that? And you can't do that unless you have a review.

The only time I observed Ms. Miller using a variation of the PACED decision making model was when she told students to turn to page 27 in their textbooks, after which she talked students through the "Video-Game-Purchase Decision Matrix" illustrated by the author. The completed matrix showed one person's thinking about three marketplace alternatives—online store, catalog, or department store—from which to buy a video game based on the criteria of price, delivery cost, delivery time, and transaction time. However, when asked, Ms. Miller assured me that she had students formally use the PACED decision making model for making big and small decisions, at least in the beginning of the semester, including what they were going to wear to school.

Supply and demand graphs. Ms. Williams spent the least amount of time teaching students about *supply and demand graphs*. In fact, while I did not observe her lesson, she told me during the post-interview that she used the supply and demand information on the state department's teacher resource website to show students what the graphs looked like and how the supply and demand curves shifted in response to various consumer and producer circumstances (i.e., *supply and demand determinants*). When asked if students were given an opportunity to manipulate the graphs to engage in economic reasoning, she said that students only practiced drawing a couple of graphs.

Ms. Levitt and Ms. Miller, contrarily, spent an average of four instructional days teaching about supply and demand, both mathematically and conceptually, starting with how to set up and understand *supply and demand schedules* and corresponding graphs. Both teachers spent about two class periods teaching students about supply and demand determinants that shifted supply and demand curves, giving numerous real-world examples for each determinant and modeling how to shift curves accordingly. Then, in Ms. Levitt's class, groups of two or three students used fictitious and real-world headlines to practice shifting supply and demand curves and finding new points of *market equilibrium*. The same activity was used in Ms. Miller's class but in a game format. Ms. Miller divided students into three groups and announced a headline for students to discuss with their team members before sending someone up to the board to draw the supply or demand curve shifts and new equilibrium points. The shifting of supply and demand curves in response to news stories students might encounter as adult citizens was intended to help students understand often seemingly complicated economic events in

terms of practical microeconomic content (e.g., *price* increases or decreases) and macroeconomic content (e.g., *circular flow of money in a market economy*)—economic instructional goals consistent with the teachers' personal orientations toward economics.

Both Ms. Levitt and Ms. Miller agreed that teachers needed to expose students multiple times to the supply and demand content and use interactive instructional practices, such as group work and games, because their students often considered the content dry and overly mathematical. Where the two teachers differed was on the degree to which they emphasized the mathematical aspect of supply and demand. While Ms. Miller expected her students to draw precise graphs and thus incorporate more multidisciplinary HCK, Ms. Levitt did not require her students to include the price and quantity numeric increments on their graphs. Rather, she was only interested in them memorizing which generic graphs represented an increase and decrease in supply and demand. See Figure 3 below, which simply represents an increase in supply without any quantifiable amounts.

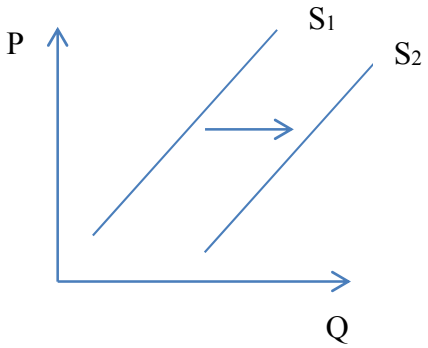

Figure 3. Ms. Levitt's Less Mathematical Supply Curve Shift.

Production possibilities frontier graphs. Ms. Williams was the only teacher who thought teaching students how to use production possibilities frontier (PPF) graphs was too advanced for her students and unnecessary for understanding the simple economic concept of *trade-offs*. Therefore, she said she was not planning on covering it. While Ms. Levitt and Ms. Miller agreed that most students had a hard time reading PPF graphs and calculating opportunity costs, they believed it was an important economic reasoning tool to teach to students, albeit to different degrees. Like Ms. Miller's mathematical high expectations for supply and demand graphs, she also expected her students to use PPF graphs to make decisions based on numerically derived data obtained by reading PPF graphs. Besides spending two days of instructional time teaching students about PPF graphs, Ms. Levitt also gave students multiple PPF mathematical problems to solve in class and for homework. Ms. Levitt also believed PPF graph instruction was important, but thought introducing it so early in the school year—most textbooks include PPF graphs in the first chapter—was counterproductive for students because it "freaks them out":

> What I have found with PPF's is, I will come back in and show them how to use PPF's after I've established the foundation…after we've done some basic and straightforward graphing that has to do with supply and demand. You take the fear out of it that way.

Knowledge of Content and Teaching

Active Learning

During the post-interviews, I asked the teachers which of their instructional practices they thought engaged students the most. All three teachers pointed to their hands-on, active learning activities, which corroborated with my observations and their personal orientation toward economics in terms of their beliefs about effective economic instructional practices shared during the pre-interview. For Ms. Levitt, active learning instructional practices meant, "manipulating information, moving around, discussing with one another in groups and with partners, or they are working with information where they're having to take real life information and apply it to the economic principles that they learned." Active learning to Ms. Miller included "activities where [students] get up and move around" in an effort to apply the economic content that they learned. She claimed, "There must be some kind of application because how else are we going to know if you really get it. That's what I like about doing the activities because I try to gear the activities toward application." In reference to an instructional simulation Ms. Williams used, she commented about the hands-on nature of the project: "It was funny how much enjoyment they get out of making stuff out of balloons and Styrofoam and pipe cleaners." Also in agreement, the teachers said students appeared to be the least engaged when they lectured economic content although believed students "have to get the information sometimes that way, and most definitions" according to Ms. Levitt. Ms. Miller put it this way, with a few words of advice:

> Lecture is always going to be the least engaging. I try to be what I call a 'dog and pony show' and be energetic. You have to be [upbeat]. You have to act like this is the most exciting thing in the whole world. I don't care if I've said it 14,000 times.

In sum, the teachers' use of active learning instructional practices was a manifestation of their personal orientations toward teaching economic content in a way students could easily understand.

Simulations. Each of the teachers periodically used economic simulations as an instructional strategy to engage students in active learning. Sometimes the simulations were intentionally designed to create economic experiences in the classroom that most students had not had in the real-world simply as a function of age. For example, Ms. Miller used a relatively simple simulation in which students pretended to farmers, which was a common occupation for her students' parents, to explain the EWT principle of *economic systems influence people's choices and incentives* and the economic concept of *tragedy of the commons*, both from the perspective of producers. Following is an excerpt of the simulation that lasted about 10 minutes:

> Ms. Miller: Okay, I need two farmers. Kaleb and Rachel come on up. These farmers raise cows. (Rachel and Kaleb walk to front of the room) Go tap students on the shoulder to get some 'cows' on your farm. Continue tapping until all the students are cows in the front of the room.
>
> Ms. Miller (sprinkling green scraps of paper about the size of 3x5 index cards on the floor around the room): This is a commons area that neither farmer technically owns where we see lots of nice green pastures and here's a nice river (motions down the center of the classroom) that divides the land that these two farmers use to raise their cattle. By the way, it takes each cow six 'cards' of grass a day to survive. Farmer A, how many cows are you going to put on your land?

Rachel: As many as possible.

Kaleb: All of them.

Ms. Miller: Okay, so farmers, go ahead and let your cows out to graze the land. Cows, go and pick up six pieces of green paper.

The "cows" quickly moved around the room, trying to collect six scraps of green paper each. After about 45 seconds, Ms. Miller called time and a few scraps were left, so the farmers sent one of their cows to quickly pick up the rest of the "grass."

Ms. Miller: Farmers A and B, can you feed anymore of your cows now that all the grass is gone. (Kaleb and Rachel nod no) Did you have to pay anything to feed your cattle? (Kaleb and Rachel hesitantly nod no) What are you going to do now? You're going to have to sell off your cattle. So, now let's say the government decides to section off the land and sell it to the farmers so that each farmer technically owns a certain portion of the land. (Ms. Miller tells students to scatter scraps of paper around the room again)

Ms. Miller: Rachel and Kaleb, this land now belongs to you. All the grass has grown back over the last year. How many cows are you going to put on the grass now?

Rachel: Four.

Kaleb: Three.

Ms. Miller: How come you're not letting your cows eat all the grass this time? Do you want all your grass to turn into dirt? What's the one difference? You now own the land, so you're going to be more careful to not overgraze the land, right? Does anyone raise cattle or anyone's family raise cattle? (four students raise their hands) Isn't that what you do? You now don't allow the cows to destroy all of your land at once. You let them graze only on certain parts of your property at a time and then move them to a new section when all the grass is gone so it has time to regrow. In economics, we call this the *tragedy of the commons*. When you don't own something, do you take care of things? (few students say no) Do people own the roads and bridges? (few students say no) That's why we have graffiti problems on the bridges around here. Who owns the roads? The government.

Drawing on her business background, Ms. Williams conducted an economic simulation to allow students to experience how producers make products and calculate the cost of production and profit, a multidisciplinary integration of economics and mathematics. Ms. Williams began by handing each student a worksheet that scaffolded the calculation of business expenses and profits, a pretend five dollar bill made from construction paper, and a resource price list for craft supplies she had laying on the table in front of the room (e.g., yarn cost $.25 and scissors cost $.75). After dividing students into six "production" groups, she began:

> Ms. Williams: There are no sole proprietorships today, although there was one student last class that wanted to work alone, and you don't get to choose who you're working with today either. When we go to faculty meetings, [Ms. Williams' Principal] numbers us off and assigns us a project to work on. You can't always work with who you like or your friends. You have to work with people you don't like sometimes when you get a real job. We are usually consumers in the marketplace, but today we are going to act like producers. So, why are businesses in business? To do what? The "P" word?
>
> Janet: Profit.
>
> Ms. Williams: Do we want to make or lose money?
>
> Janet: Make money.
>
> Ms. Williams: We have had people embezzle money from their companies this morning. One student stole a balloon last class. She was using company supplies for personal issues. Best case in the real-world, you would get fired, or even worse, you would go to jail. Notice, everyone has the same $5 which isn't true to life. Not everyone is rewarded the same for their hard work and labor. And you should not just be given money without working hard like when Ms. Willis just passed out money. You need to make your product for less than $5 so there's profit left over. Here is your table of supplies which are listed on the sheet with prices. (walks over to the table; see Figure 4 below) Remember, you are renting scissors, glue, and markers, for example. You don't own them. If you use scissors to cut yarn, you have to still pay $.75 for scissors. That's where we as

> Americans get into trouble. We don't think about all the details. If I go to dinner, I still have to get groceries at some point to have something in the house to eat like bread and milk. Make sure you keep accurate records of the resources you use. If you use something you don't find on the list, charge your company $.25. Don't cheat. You'll only loose in the long run.

Figure 4. Ms. Williams' Table of Supplies.

After Ms. Williams gave students their instructions and interjected life lessons along the way, which she commonly did, students spent about 25 minutes "producing" a product and calculating the total cost of production using the resource price list then subtracting the total from $5 to determine the profit margin per product earned by each of the six "companies." One student from each group then "sold" their group's product to the class by giving a brief promotional speech, after which Ms. Williams handled or demonstrated each product and reiterated the key product features and benefits. Figure 5 shows a picture of a product called the "Handy Sack" produced by one of the student groups.

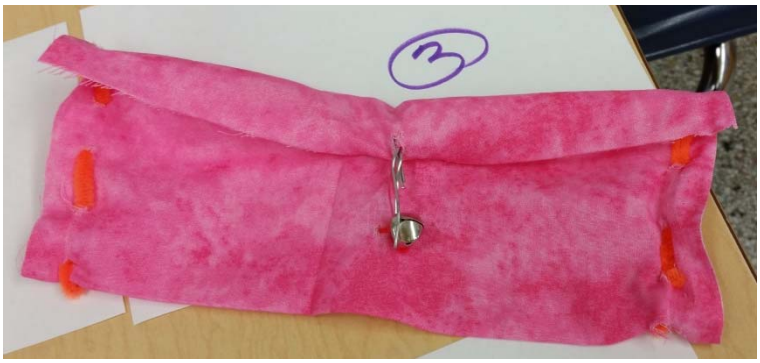

Figure 5. Example of the "Handy Sack" Product Produced by a Student Group in Ms. Williams' Class.

After all the student groups presented, Ms. Williams said,

> Ms. Williams: Okay, so you are now switching from producer to consumer and deciding what you are spending your $5 on. After you decide, come up to the table and lay your $5 on an item that you would spend your money on. Think about making the best purchase you can make with your precious $5.

Students walked to table and put their $5 on a half sheet of paper beside one group's product. Ms. Williams then counted the money "paid" for each group's product and called out the "total revenue" and projected "quantity sold" for students to record on their worksheet. Ms. Williams then quickly reviewed the profit/loss equation (i.e., total revenue – total cost = profit/loss) at the bottom of the worksheet as the bell was about to ring and told students to complete the worksheet for homework and write three to five sentences in the margins about what they would do differently as a "producer" the next time, such as buying better or cheaper supplies. This activity, whereby students simulated the role of a producer, was likely the first such experience for most students.

In her unit entitled "Producers and Consumers in a Market Economy," Ms. Levitt implemented a simulation geared toward understanding how producers and consumers were influenced by incentives—that is, the EWT principle of *economic systems influence individual choices and incentives.* The simulation was based on a lesson in *Capstone: Exemplary Lessons for High School Economics*, a CEE publication. Ms. Miller began the simulation by reviewing the economic concepts of *positive incentives* and *negative incentives:*

Ms. Levitt: What's an example of a positive incentive, Judy?

Judy: My parents letting me go to the mall if I get good grades.

Ms. Levitt: What's an example of a negative incentive, Kelly?

Kelly: Not being able to hang out with friends.

Ms. Levitt: In economic systems, there are positive and negative incentives. Today we are going to see how rules lead to incentives which then influence economic behavior. What are some examples of rules?

Dillon: No cell phones in school.

Ken: Don't kill somebody.

Ms. Levitt: Okay, rules of society can also be laws. Other rules you follow?

Koby: Dress code.

Ms. Levitt: What about in the workplace?

Callie: No sexual harassment.

Ms. Levitt: Another rule in the workplace?

Helen: Show up on time to your shift.

Paul: Don't be under the influence of drugs and alcohol.

Ms. Levitt: That's also a rule at school, at work, and home. It's also a law. What keeps us from not doing these things? If you're told you have to be on time, what's making you be on time?

Jackie: Your paycheck.

Ms. Levitt: Okay, so a positive economic incentive might be pay.

Paul: Because you don't want to lose your job since it's hard to find one.

Ms. Levitt: When you know the rules and the incentives, you make your choices accordingly, don't you? We're going to do an activity that shows that rules and incentives change choices and economic behaviors.

Ms. Levitt then told students that they needed to create two answer sheets for the quiz she was going to give them by numbering one through ten on the front of their paper and again on the back. Before Ms. Levitt passed out the quizzes, she reviewed the EWT six principles by displaying them on the overhead and asking students to tell her what each principle meant along with examples of the principles at work in their own lives. Then Ms. Levitt said, "When I give you the quiz sheet, don't start until I tell you to start. Don't write on these because it's a class set." While she passed out the quizzes, she added, "So, here are the rules: do your very best; no marks on the quiz; mark your answers on answer sheet; you've got four minutes; no talking." The quiz was comprised of ten multiple choice questions about the EWT, which served as a review, plus two questions that foreshadowed profit calculations, which was the topic of the new economic unit Ms. Levitt was starting in two days. After the 10 minutes expired, students traded papers and graded them as Ms. Levitt called out the correct answers. Ms. Levitt then told

students to count the number of correct answers and put the number in the margin of the paper along with the grade the student earned based on the following grading scale she posted on the overhead:

Number Correct	Grade
4 or more	F
3	D
2	C
1	B
0	A

A few students appeared upset and immediately asked for clarification, insinuating three times that Ms. Levitt obviously made a mistake with the grading scale:

> Ken: So you're telling me that if you got them all wrong, you get an A?
>
> Ms. Levitt: Yes, those are my grading rules. Okay give the papers back to their owners. (pauses a few seconds, allowing students to express discontentment) Raise your hand if you got an A? (no students raised their hands) B? (no students raised their hands) C? (no students raised their hands) D? (one student raised his hand) F? (fifteen students raised their hands) How many of you try to get the best grades you can? Raise your hand. (most students raise hands) Most students see earning a good grade as an incentive for trying hard. What are other incentives for working hard?
>
> Kim: Better GPA.
>
> Students (randomly): Getting in into college. Finding a good job.
>
> Ms. Levitt: What about incentives here and now?
>
> Kim: Not getting in trouble with your parents.
>
> Ken: Or a coach.
>
> Ms. Levitt: Okay, so gaining approval from your peers, parents, and teachers. Why did most of you end up with a low grade even if you tried hard?

Greg (laughing): Because we did well.

Ken: We thought it was a normal grading system.

Ms. Levitt: But I changed the rules. You operated under the assumption that the grading rules were the same. You do well, you get a good grade. Good grades allow you to go out this weekend. What does the incentive do?

Jackie: Persuades you.

Ms. Levitt: It persuades you to do something in a particular way, right? If you knew before you took this quiz, that I changed the rules, what would you have done? You would have chosen wrong answers to get a higher grade. What would have changed then? Incentives then behaviors, right. Are you following?

Ken: Yes, but don't pull that on us again, Ms. Levitt. I mean it. That really did mess with me.

Next, Ms. Levitt showed students a more traditional grading scale and told them they could take the same quiz again. For example, if students got all 10 questions right, they earned an A, if they got nine questions right, they earned a B, and so forth. However, she then said, "All students that earn an A will get a writing assignment to do until the end of class. Everyone else will have free time and can do whatever they want." After students took the quiz again and graded a classmate's paper, Ms. Levitt asked students to raise their hands when she called out their new quiz grade. Only three students raised their hands signaling they got an A, about four students raised their hands signaling they got a B, and the rest of the students earned either a C or a D.

Ms. Levitt: Why didn't you all earn an A? You already knew the answers.

Ken: We didn't want to write a paper.

Ms. Levitt: So incentives changed. What kind of incentives?

Zane: Negative.

Ms. Levitt: For those who didn't want that outcome, what did you do?

Jackie: Purposely missed one, so we wouldn't have to write paper.

Ms. Levitt: How many did that? (the majority of the students raised their hands)

Ms. Levitt: What caused that incentive to change?

Jackie: The teacher.

Ms. Levitt: I changed the rules. To most students, writing a paper is a punishment. I changed the rules, so incentives changed, then your behavior changed. Copy this diagram in in your notes (writes on the board): Rules → Incentives → Choices

Ms. Levitt: Let's talk about it. Who sets rules?

Jackie: The government.

Ms. Levitt: Government, any authority, whoever is in control, school board, parents, employer, community. When there are rules, there are always incentives to do or not do something. If rules change, incentives change, and behaviors change. It's all connected. It's not just something that's out there in a cloud. There's always an incentive in every choice we make, to gain or to avoid something not positive. Do you follow me with this? (several students nod their heads) Countries make rules. Some encourage us to use resources efficiently and to exchange goods and services. Some discourage us from using resources and exchanging. I'm going to share five rules from different countries that relate to economic activity in that country. Now some of these scenarios will involve religious beliefs or values, but our purpose is not to judge them as right or wrong, rather how they encourage or discourage economic activity.

Moving from students' personal experiences to the less familiar global perspective, Ms. Levitt read a series of rules and laws enforced in countries around the world and helped students understand how people's behaviors responded accordingly and the consequential impact on the each nation's economy. That is, Ms. Levitt modeled the application of the

EWT to understand seemingly odd and complex economic events occurring around the world, a life skill students would likely use as adult citizens. Then, in keeping with Ms. Levitt's intentional repetition of key economic concepts and principles, she concluded class with the following quick review:

> Ms. Levitt: What happens when rules change?
>
> Ken: Incentives change.
>
> Ms. Levitt: What happens when incentives change?
>
> Jackie: Behaviors change.

In addition to formal simulated activities, all three teachers occasionally used a simple and quick simulation to make an economic concept clearer in the middle of a lecture. For example, when discussing *fiscal policy* and defense spending, the following illustrative exchange took place in Ms. Williams' class:

> Ms. Williams: How important is defense? Did anybody see the news about drones lately? That is scary.
>
> Kate: I heard that if we cut our defense by 80 percent, we'd still have the strongest military in the world.
>
> Ms. Williams: I'm not sure about that but, how many of you feel safe? If we are cutting the military, it means what?
>
> Janet: More money for other stuff.
>
> Ms. Williams: I'm glad you said that, but this is the thing you don't get, when we cut the military, let's say this half of the room is in the Navy (walks to one side of the room) so you all have government jobs. Now you all work in the private sector (walks to the other side of the room). Where are you all going to work, since they're cutting military jobs? (points to three of 'Navy employees') You

were all good employees, but the government is cutting back, so now you're unemployed (makes the three Navy employees stand in the center of the room) When we start cutting jobs, we think we're freeing up more money, but where are these people going to have to find jobs? You all need to now try to fit into the private sector. (signals for the three students to come to the private sector side of the room and sit at an unoccupied desk) Oh no, one student can't find a desk to work at. What's going to happen to her?

Steve (laughing): Jail because she's hungry and has to steal.

Ms. Williams: She's in her 30's and can't find a job. What do we have to do for her?

Janet: Give her money.

Kate: There's ups and downs to everything including government spending.

Ms. Williams: That's what worries me. I've had friends make money by doing tours in Iraq, but with military cuts, they are now unemployed. It's sorta like robbing Peter to pay Paul. There's not an easy fix. Downsizing the military might mean we're going to have to give food stamps and unemployment benefits to some people. When they say one solution will solve all the problems, is that true?

Kate: No.

Ms. Williams: So, when we're watching commercials, we have to ask the hard questions.

Another example of how these teachers used economic simulations as instructional practices was when Ms. Miller and Ms. Levitt used the same assessment for their unit on economic systems. Students assumed the role of a king or queen starting a new country based on the following simulated role description:

Your Role: You have started a new country and you want to promote it to the rest of the world. You are King or Queen, so citizens will not be able to change your government policies. You want to invite people to live or visit your country based on your economic plan. First, you must explain the difference between

> market and command economies. Then you must explain how your country will work. Will it be mostly a market economy or will it be a command economy? Detail specific issues that are important to your economy and make your country unique. Make people want to visit or live there. Be persuasive!
>
> Your Audience: Prospective immigrants or tourists who want to come and enjoy what your country has to offer.

Based on these and other simulation instructions, students designed a trifold brochure, which was graded according to a rubric. See Appendix R for an example of students' brochures in Ms. Levitt's class.

Political cartoons and games. Both Ms. Levitt and Ms. Miller also used the same political cartoon activity from the Teachers' Curriculum Institute's economic curriculum package to teach students about the role of government in a market economy, which they and I agreed struck a good balance between conservative and liberal perspectives. Ms. Levitt, however, included a graphic organizer to begin the lesson where students had to list each of the eight roles of government in a market economy, draw a symbol to represent each role, write a brief summary of the roles, and then give an example of how the government carried out each role. The eight political cartoons were printed on eight sheets of paper and placed around the room. Students were instructed to get into groups of two or three students and circulate around the room to critically think about and discuss each cartoon in their groups, a citizenship skill they might later encounter as adults. Each cartoon contained four critical thinking questions at the bottom of the page to scaffold students' thinking and discussions. Before moving to the next cartoon, students had to fill in a three column chart that required them to list the role of

government represented by the cartoon, describe the cartoonist's possible point of view (i.e., liberal or conservative), and explain why they agreed or disagreed with the cartoonist. This activity aligned with the teachers' instructional goal of forming critically minded citizens.

The teachers also incorporated active learning strategies by presenting economic content in a game-like format. For example, to review supply and demand curves, Ms. Miller divided students into three teams. After Ms. Miller read aloud a fictional headline about either producers or consumers, each team discussed which curve would shift and in which direction and then sent a team member up to the board to draw their answer and indicate changes to price and quantity demanded or supplied. Ms. Miller would then give a point to the team or teams that drew the curves correctly after she discussed the right answers with the class. Another game-like instructional example included the "Who Wants To Be a Millionaire?" game published by the CEE that Ms. Levitt played at the beginning of the year where she read true and false statements about millionaires' lifestyles and economic choices. Students either wagered $5 or $10 each time they held up their "true" or "false" cards, depending on how sure they were of their answers, which they kept track of on their game cards. The students with the highest dollar amounts at the end of the game won.

Technology-related activities. In addition to students playing the online Stock Market Game™, all three teachers used computers to access current events and economic data on the Internet. On one occasion, Ms. Levitt scaffolded students' search for economic data on the Federal Reserve System websites by using a Webquest format to

make sense of often complex economic charts and graphs. She also encouraged her students to download cell phone applications to access news and investment information as some adult citizens do:

> I've used computers quite a bit this year, particularly in looking at data, looking at charts and graphs. I've had them pull it up on the computers, and then I look at it with them and discuss it with them. A lot of current events won't pull up on the computers, so we'll use a laptop as technology for that. Even with their phones, to make it really practical for them in real life, I encourage them to download the apps for different news organizations. I said they have to check three different news sources. Don't just go with one. Look at three. Now that we're playing the Stock Market Game™, all the iPhones have the investment app that's already on there. They can drag it, and it pulls up the stock market stats for the day, and they can download what their investments are in the game. They can track their investments that way, and they're doing it right on their cell phones.

Ms. Levitt said she would like to use more economic cell phone applications in the future and will continue to send her students text messages about upcoming assignments. When asked about the role social media (e.g., Facebook and Twitter) might play in her instruction, she thought incorporating some kind of blogging technology would be useful where she could communicate more extensively with her students outside of class as well as post assignments similar to how learning management systems like Blackboard operate.

In addition to using the Internet to access current events in economics, Ms. Williams also allowed her students to use their cell phones to download investment applications to inform their investment decisions when playing the Stock Market Game™. Because Ms. Williams' students sat at a computer station each day, she also directed students to read about various economics-related organizations (e.g., Small

Business Administration), often guided by a few questions she composed to begin a new concept or unit. Her students became so accustomed to quickly searching for economic data on the Internet that they occasionally looked up economic statistics and data while Ms. Williams lectured and voluntarily interjected them into the class lecture or discussion. Her concerns with using technology was her students' lack of discipline to stay on task when completing an assignment because she had caught many students playing games or accessing unrelated websites. In terms of using social media, she said her school prohibits students to use those sites to reduce the amount of wasted instructional time.

While Ms. Miller also used computers for students to read about economic news and research economic data from various websites, she was also weary of incorporating too much technology into her instruction but for different reasons. Her caution centered on the misinformation that websites posted:

> The false information and flat out lies [are concerning]. It's just so easy to put anything out there. People just eat it up because it's online. The fact that things can spread so fast without any backing, without any knowledge base. That's a dangerous thing, and when it comes to our economy, it is as bad.

She also added that her school prohibited students from using their cell phones in class and she still had to borrow a classroom set of iPads from the science department if she wanted to use them, despite being promised her own set two years ago.

Knowledge of Content and Students

Student Relevance

More than any other theme that emerged from the data, all three teachers attempted to make personal connections to the economic content for students on a daily basis, often multiple times within each class period. This observational finding triangulated with the teachers' personal orientation toward economics with regard to what they believed counted as effective economic instructional practices, as revealed during the pre-interviews. This focus on student relevance usually included breaking down complex economic concepts and principles into understandable "chunks" and including relevant real-world examples to facilitate student learning. Anticipating common student misconceptions of economic content followed by corrective instructional strategies also aided teachers in delivering instruction to which students could relate.

Economic analogies. One way the teachers helped students understand unfamiliar economic content was by using analogies. For example, when differentiating between the types of business ownership in class, Ms. Williams compared a business partnership to a marriage partnership:

> Ms. Williams: Partnerships are two or more people working together like in a marriage. I love that analogy. Or like on your stock market team. If someone drops the ball, you need people who will pick it back up. You need to have someone you work well with. Where you're strong, they're weak, and where you're weak, they're strong. That way you cover all the bases.

During another class, Ms. Williams also compared the lowering and raising of reserve requirements of banks by the Federal Reserve to lowering and raising of interest rates on car loans, while tying in the EWT principle about *incentives*:

> If you have a job, how much of your income should you have in the bank? Because economic things could happen, you should have six months of salary, which I personally don't have. The Reserve is like that. They need to have a certain amount of money in the bank. The Fed raises and lowers the reserve requirements to increase and decrease money available for loans. If rates go down, do banks borrow or not borrow money from the Fed? It's just like us buying a car. We buy cars when car companies offer lower rates, right? Just like companies give us incentives, the Fed gives its banks incentives.

In a similar way, to help students distinguish between *private and public goods and services*, Ms. Miller compared them to apples and street lights, respectively:

> Ms. Miller: Get apples in your head for private goods, because once someone eats it, no one else can eat it. For public goods, think of the street light that if one person stands under, it doesn't stop someone else from standing under it and getting light.

During a lecture about the roles of consumers and producers in a market economy, Ms. Levitt compared the economic concept of *consumer sovereignty* to being a queen or king in the following exchange:

> Ms. Levitt: What comes to mind when you see a crown on TV?
>
> Students (randomly): Wealth…Power…King.
>
> Ms. Levitt: What do kings and queens do?
>
> Paul: They rule.

Ms. Levitt: Yes, they have power. Today we are going to talk about the power of the consumer. The reason I want you to think about a crown is because I want you to make the connection between consumers and fact that they rule the market. What do the consumers have the power over?

Ken: The economy.

Ms. Levitt: In a sense, yes. You know when the government puts out a report about the economy, like when the President and our Governor say the economy is doing better than ever, do we always believe that?

Ken: No.

Ms. Levitt: What do we base how the economy is doing on?

Zane: Your own life.

Ms. Levitt: Am I feeling that the economy is doing good today? No, I'm feeling more poor and feeling disgruntled [based on my low salary that we discussed when class started]. That's how most citizens look at the economy, based on their own experiences. What the consumer wants is what the producer gives. You're going to draw this picture. (draws crown on the overhead) So remember, when you see a crown you're going to think about how consumers rule. Okay, here are your notes for today (writes on the overhead): 1. Consumers rule!!! So producers must produce goods and services that consumers are willing and able to buy.

Breaking down economic content. In addition to using analogies, teachers often attempted to break down complex economic terms by first defining the words in the phrases, as this illustrative example of Ms. Levitt explaining GDP showed:

Ms. Levitt: The definition of GDP can seem lofty, so let's break it down by each word: The first letter is "G" which means *gross*, but not like disgusting. It means the total amount of something. How many of you get a paycheck? (about half of the students raise their hands) Your gross income is your total earnings before they take taxes and other deductions out. What's left is your net income…Okay let's look at the word *domestic* in the *gross domestic product*. How many have flown on an airplane? How many have flow somewhere within the U.S.? What do we call those flights?

Paul: Domestic.

Ms. Levitt: When I went to China, what kind of flight was that?

Paul: International.

Ms. Levitt: So whenever you see the word *domestic*, it's always within your own country or homeland. Okay, the "P" stands for *product* or what is being produced. I think it's important to know what these lofty economic terms mean, and when you break them down and know what each of the words mean, then you can figure it out and it's not that hard.

Ms. Levitt concluded by writing the formal definition of GDP on the board: "the total market value of goods and service within country that are produced in one year."

To help students understand and remember, both Ms. Levitt and Ms. Miller also required students to draw pictures of economic concepts and principles. For example, Ms. Miller assigned students to draw a symbol or picture that represented the three basic types of *economic systems* (i.e., *command, market, and traditional economies*). She gave another homework assignment where students drew pictograms for each of the three *factors of production* (i.e., *natural, human, and capital resources*).

Real-world examples. Because all three teachers used relevant, real-world examples on a regular basis, I asked them to give instructional advice to other economic teachers during the post-interview. Ms. Williams said that coming up with examples to which the students could relate would probably be easier for a younger teacher who is closer to the students' ages. The next best thing would be to use real-world examples from younger family members or friends:

> I tell stories about my 20 year old child because you can't compare where you are at 50 to where they are at 16 or 18. They like real stories, and nobody wants to hear about 30 years ago when I was 18. You know because that's the dark ages. So depending upon where you are in life, you need to find a niece or a nephew, a brother or a sister, or somebody else you know, and you might even have to make up some story that sounds really personal like you really know it and it really happened.

Ms. Williams also stressed the importance of using examples related to the calendar year such as her school's football season and Black Friday as well as local examples: "We can't talk about what's going on in [State Capital Name] to students who have never been out of [Town Name]. I think you have to understand your surroundings if you really want to be effective."

Similarly, Ms. Levitt stressed the importance of frequently using real-world examples that the students understood:

> I feel like the more real-world examples you can use, the better. Plus it keeps them connected to what's happening today and the more you can make them relate to [the economic content]. But you need to use examples they can relate to. You can't use real-world examples that they don't know what you're talking about because that's useless, like double removed from their lives, and that's worse than the textbook.

Ms. Levitt also shared an instructional practice whereby she used a real-world example to introduce a new economic concept and, after she delivered instruction on the concept, she revisited the introductory real-world example:

> Pick something and you talk about it kinda like an introduction. Then you get into the concept and then when you're doing activities or other concepts, you come back to it and you go, 'Remember when we were talking about this? Now how do you feel about it?'

This strategy kept students' learning of unfamiliar economic content grounded in prior knowledge of more familiar knowledge and experiences.

Ms. Miller reached consensus with the other two teachers regarding the importance of regularly incorporating real-world examples into her instruction. She said,

> I always pick something that you know is going to peak their interest. Like the whole Ebola thing really peaked their interest, which is horrible to say. And the whole gas thing. Notice how many times they bring up the whole thing about the cost of gas…especially my kids that are driving. It's hitting home to them.

Ms. Miller also agreed with Ms. Williams in that economic teachers sometimes needed to use the mindset of a teenager when coming up with relevant examples of economic content:

> Sometimes you have to model your thinking like a student or they're not going to get it. Whether you like it or not, you're not going to agree with their thinking. At least I hope you don't agree with them because there are lots of years and experiences between you and them. You have to think back to how are they going to relate to this because if you don't put yourself back in their mindset, then they're never going to get it…You have to connect.

Ms. Miller added that it was important to use examples based on the students' personalities and backgrounds in each class because "you have to know the crowd you're talking to." In other words, examples that might work in one class might not work in another class.

Beyond sharing examples from their students' points of view, each teacher also shared stories about their own personal experiences related to the economic content they

were teaching as another way to help students relate. When teaching about *privatization*, Ms. Miller shared,

> Ms. Miller: At that environmental economic conference I was telling you about, I went to a body of water for a field trip were these little fish were being overfished, and there weren't many left. Don't ask me to remember what kind of fish they were, but they were used to produce that fish oil that's supposed to be so healthy for you. Anyway, much of the community was employed by this fish oil manufacturer and was dependent on catching these fish. So what the government did was what's called privatizing this body of water for business purposes. Essentially, they gave people certain parts of the water by sectioning the water off using buoys. No one could fish between your two buoys, for example, and that whole little community came back to life. So privatizing can work simply because there's an incentive to preserve the resources, just like we saw in our farming simulation.

As another class example, Ms. Levitt recounted her recent trip to China while discussing the differences between *command and market economies* after viewing a documentary about North Korea:

> Ms. Levitt: Today, North Korea is still the same as the video showed with extreme control and labor camps. When I went to China, they had an assembly meeting while I was there. We went to look at something, I forget now what, and they were closing off the area for the meeting. Military was everywhere. Two officers held a yellow rope and slowly had people back up as they carried the rope away from the building. Nobody questioned them about why they were closing the area. Nobody made eye contact. They literally cleared a thousand people off the square in about five minutes because all these diplomats were there for a high-powered assembly meeting. They were voting on whether or not to disband labor camps in China for people who go against the Chinese government.

Despite not having formal coursework or professional development training in culturally relevant or social justice pedagogy, all three teachers also occasionally used real-world examples that were sensitive to students' family backgrounds and gave voice

to often marginalized perspectives. For example, because Ms. Miller and Ms. Williams' students were from a rural part of the state where almost half of the students qualified for free and reduced lunches, they both used real-world examples that represented lower socioeconomic life experiences and rural occupations and recreation. Only 26 percent of the students at Ms. Levitt's school qualified by free and reduced lunch; however, like Ms. Miller and Ms. Williams, she was still intentional in providing examples that related to students who were already working part-time jobs and likely not going to college.

With reference to showing equal respect for students' decisions to go to a traditional four year college and a trade school after graduating from high school, Ms. Levitt said during a lecture on *human capital* during the third week of school,

> Ms. Levitt: The more you invest in your education, the more you'll earn over your lifetime. If you compare the income of a high school graduate to someone with a two or four year college degree or even a trade school, you'll make more with an education or some kind of skill set. I've had this same conversation with my own kids. I told them that I don't care what you do, but you have to get a skill set to compete in the marketplace. Maybe you like to work with your hands and want to be an electrician. Maybe you go to a trade school after you graduate and start developing your human capital that way.

Ms. Miller shared a similar respect for students who chose to attend a community college or trade school after students shared what they would do with a hypothetical gift of $1,000 once they graduated from high school. In response to some students saying they would use the money for college expenses, she said,

> Ms. Miller: When thinking about going to college, I want you to think about the costs. You don't necessarily need to go to college, but you need a skill, a tradable skill, maybe through a training program or the military. Maybe you go to a

> community college to save money. Classes cost about $150 per credit, which is much cheaper than universities, and once you get an associate's degree, you can transfer to most universities. [Local University Name] is about $20,000 per year, and the average student goes five years to school these days. So if you don't get any scholarships or grants and pay out of pocket, you can go to a community college and get an associate's degree for about one-third of the cost. Remember, when we talked about government subsidies? All state universities get subsidies and sponsor community colleges, which is why it's so much cheaper. That's what I did. I got my associate's degree in business at [Local Community College Name], then transferred to [Another Local University Name] to get a bachelor's degree in business and then stayed on to get a master's in vocational education. When you get your bachelor's degree, it doesn't say you were only there two years. Besides, I recently read that the majority of people change their majors during the first two years anyway which means some credits won't count toward your degree. Going to community college is especially a good choice if you don't know exactly what you want to study and can stand to live at home with your parents. Maybe you could convert the basement into your bedroom and have an adult conversation about things like your curfew. I remember when I had that talk with my daughter.

All three teachers also used economic examples that related to the jobs students held. When teaching about *entrepreneurship* and the advantages of small businesses, Ms. Williams made the following comments about Robert's car repair business that he and his father owned:

> Ms. Williams: Small businesses are less competitive than Walmart because they can't drive prices down. What makes a small business work then? Has anyone ever gotten Robert to fix a car? [My son] and I started working on a car this summer. What if I take my car to Robert? Does he appear to know what he's talking about here in class? What would he do to get my business? Good work, fair price, I know him. There is something to knowing someone. What else when you walk around…downtown? Do you feel appreciated? [Town Festival Name] is this weekend. Those are going to be all small businesses. If I go to Robert, what do small businesses offer that big businesses won't? What else can't you get from big businesses? What about the turnaround? You might get in line behind a lot of people in a big business. So, fair price, quality, and turnaround make a difference.

Also using students' jobs and education as an example, Ms. Levitt attempted to make the often seemingly unrelated macroeconomic concepts of *unemployment* and *inflation* relatable to students' lives, as illustrated below:

> Ms. Levitt: You might be tempted to think, 'Who cares about the economy? It seems like it's over our heads most of the time anyway. What do you think most adults do when they hear politicians talking about the economy on TV? They tune it out or change channel. You might think that all those numbers don't affect me. Besides, I'm okay, so things can't be that bad. But it does directly affect you. How?
>
> Tim: Getting a job.
>
> Ms. Levitt: Why do we work?
>
> Paul: To pass time.
>
> Ms. Levitt: Oh trust me, I could think of a lot of other ways to pass the time rather than working. I work to get the goods and services I want. The reasons we measure the economy is to know about jobs. How many of you are 14? (no students raise their hands) 15? (three students raise their hands) 16? (about seven students raise their hands) 17? (about seven students raise their hands) 18? (two students raise their hands) Most of you are about one to five years out in getting a full time job and making money to be responsible for yourself. Why do you need to understand what the job market is like in relation to the economy? It's directly related to what you choose to do for a living. Everything is related to choices. Life is all about choices. I always tell my children that I don't care if you go to a four year school or just learn skills on the job, but you have to be independent and take care of yourself. My son went to a four year college and my middle daughter started school but hated it. I won't tell them what path to choose, but I do tell them that I want you to have a job to take care of yourself. She is now studying medical coding. You need to know what jobs are in the economy so you know what to look for or not look for. This economic data directly affects you today! Why else should you care about the economy?
>
> Garrett: Might need to know what's happening in the stock market if you want to invest.
>
> Ms. Levitt: Yes, you want to know how stocks are doing. What else would you want to know about jobs in the economy?

Tim: Job security.

Jackie: Benefits.

Ms. Levitt: What's the most important thing you care about in a job?

Jackie: How much we make.

Ms. Levitt: Yes, and wages are directly related to the economy. If the economy is good, wages go up. If the economy is bad or stagnant, then wages won't go up. It's important because it affects how much you make, right? Why else should you care about how the economy is doing? Prices. Don't you care how much you have to pay for goods and services?

Ms. Williams and Ms. Miller were also known to interject comments that suggested to students that being rich was not necessarily a better lifestyle in order to relate to economically disadvantaged students. When talking about franchises, Ms. Williams said, "But cheap is a relative term. What's cheap to you might not be cheap to someone else," in order to mediate a comment made by a student about shopping at a particular business because it had cheap prices. Also in response to a student commenting that she wanted to be wealthy, Ms. Williams said, "Yes, we all want to be wealthy and some people think it's important, but I think people who are not wealthy can also be happy." Similar comments were made by Ms. Miller when she talked about the EWT principle of *voluntary trade creates wealth*:

Ms. Miller: So, trade makes us wealthier by putting goods in the hands of those who value them. Are you willing to buy something you don't want? No, I only pay for things I value. What we value is what we spend our money on. Anyone ever been to a flea market or yard sale? Ever heard of the saying 'one man's junk is another man's treasure?' What one person finds valuable, another person doesn't…When we think of wealth, what do we think of?

Kip: Money.

Ms. Miller: We think of money. Did you know you can be wealthy without money? Michael Jackson actually had little money when he died because he would spend millions when he went shopping. He bought a whole zoo once. He is still considered wealthy if we added up all that he owned, but he actually had little money. Economists define wealth based on what you own and money. If you added up everything you owned, you are probably more wealthy than you think. Are there things not of monetary value that also make you wealthy? Absolutely, I have things from my grandmother that are priceless to me. So there are different ways of defining wealth.

Ms. Miller also created a sense of respect and empathy for people who received unemployment benefits, despite the negative comments often heard about such recipients being lazy or purposely choosing not to work, when she lectured about antipoverty policies enforced by the government:

Ms. Miller: The other one that falls under income redistribution is called the earned income tax credit. For this one, you have to have worked some. Not much, but some. You also have to have at least one child and fall below a certain level of income. When you file your taxes at the end of the year, you might get a refund check that will bring you up to a certain income level. Sometimes it can be a substantial amount of money, depending on how many children are in the family. Then we have unemployment insurance, which may sound weird because it's not really a handout linking it with welfare. Anybody ever had a family member who drew unemployment insurance?

Rachel: (hesitantly raises her hand)

Ms. Miller: Say your family member goes to work every day, and one day their boss comes to them and tells them they are being laid off because business has been slow for a long time and they're going to have to shut down the plant. Now keep in mind, you didn't get fired and you didn't do anything wrong. Can you imagine how bad you would feel? You could lose your family's house and car…So now, when you get laid off for two to three weeks, you start drawing a check from the state. You draw from a big pool of money that all employers pay into. Let's say a disaster like Katrina happens and wipes out businesses and

> homes. You could see how the state money would be drained quickly, at which point the states can ask for more money from the federal government.

All three teachers also related to rural students on a cultural level by using economic content examples such as hunting, fishing, watching Duck Dynasty, attending town festivals, buying popular tennis shoe brands in addition to weaving in personal finance examples to which students naturally connected. Similarly, the teachers assigned homework and projects that allowed students to express their personal lives in relationship to economic content. For example, when Ms. Miller told students to create a comic strip depicting the differences between *comparative advantage* and *absolute advantage*, the Asian boy in class used his family's local Chinese restaurant as the backdrop, and the Asian girl featured a female engineer in her cartoon, which she later told me in private that she aspired to become an engineer because she thought she could "solve more of the world's problems using numbers rather than words." See Appendix S for a comic strip example featuring a fox's comparative advantage in hunting.

Student misconceptions and instructional remedies. In addition to the ways that students commonly struggle to understand and apply the economic reasoning tools (e.g., the EWT principles and supply and demand graphs) discussed in previous sections of this chapter, I asked teachers about other common student misconceptions along with recommended instructional remedies. During the mid-interview, I made a chart of all the economic concepts and skills teachers had covered to that point and gave it to the teachers to assist in their recollection of student misconceptions and their instructional practices. I told the teachers that I would leave the chart with them after the interview in

case they thought of something new, they could write it down on the chart and give it to me when I came back for an observation. None of the teachers offered new information.

To handle student misconceptions, Ms. Levitt said during the mid-interview, "I think you have to know your material. So if you know your material, you know what is going to hang them up." In particular, understanding economics from both a consumer and producer perspective was challenging for students simply because they had limited life experiences in being a producer; therefore, role playing was an effective instructional strategy. Ms. Levitt elaborated,

> I think the most important thing you can do is try to address the concept at every level of student learning…I think it's important to model it from the perspectives of producers and consumers. They're always going to be the consumer, so they can always relate to that better than the producer side. Then I say when you are considering the producer's supply side, think about what you would do as the store owner. If you're the one making this [product], what would you want? So then we role-play.

As was the case for all three teachers, Ms. Levitt also thought much of the macroeconomic content was difficult for students because it was harder to make relevant to their lives in addition to the complex nature of the concepts. Using "corny" instructional resources that simplified the content seemed to work for Ms. Levitt:

> The macro stuff would be…the hardest thing for them to get, and the thing I enjoy teaching the least is the Fed. That is a really hard concept for them to get because it's so much information and complex, and if I can get them to do the basics of it, then I feel good about it…I found some pretty good things last year on YouTube that were a little…I guess kinda lighter, and it approached only a few concepts at a time. Then I found a couple of activities that went along with it that kind of reinforced it a little bit at a time instead of it being so much. I found one that was so corny they actually liked it. I just showed it at first, just to hear them moan,

> and then they went 'Oh, this is just too funny'…The concepts were all there, but I think it was just so corny that it helped them remember it. So sometimes that works…You do as much as you possibly can to ramp it up a little bit, but it's still just kinda the Fed.

In more general terms, Ms. Levitt offered the following advice on how to help students understand more difficult economic content:

> You need to make it as practical as you can. You need to use as many demonstrations [as possible]. You need to make this verbal, and you need to have kinesthetics. You need to have them up and moving. You need to have them manipulating the information. You need to have them writing it, looking at it, questioning it, examining it. Tell me what this means to you. How does that relate? You need to make it very, very practical for them. It takes more time to teach it that way, so it's going to be difficult to fly through information, which is why I think you have to be willing to sacrifice something along the way. I always say you have to let some things go in the gutter to let the other things go on the road.

Another general instructional approach that I observed Ms. Levitt using was verbal repetition of big ideas in economics such as when she taught about the difference between government and economic systems. She asked students four times within the same class period, "So, is our economic system the same as our government system?" Almost in unison after the third time, students answered "no."

When I asked Ms. Williams what she thought were the hardest economic concepts and skills to teach, she also mentioned the Federal Reserve System, which she said she purposely taught at the beginning of the year even though it was somewhat unrelated to her other learning objectives. She said, "I cover some of the things that I think are the most difficult [early], but there are no things to tie them too…You need to front load it

because they are more apt to give you more attention in the first nine weeks." However, Ms. Williams thought all of the economic content was difficult for students because of their age and inability to see how economics impacts them daily:

> I don't think they get any of it. I think that word *economics* and the *economy* are grown up words and that they don't think it applies to them. We're teaching this to a base of 10th graders, but by the time you get to high school, you need to be thinking about…how what we did yesterday is going to affect us and how tomorrow might really affect us in the future. They don't get that at all…I tell them that there was a time when I didn't really get that either. Like the whole idea of the stock market and how what the stock market is doing drives the economy. Well, we're in the poorest zone for [County Name] and so if you've never owned stock or don't think you're going to own stocks, it's really easy for you to dismiss that none of that actually applies to you. But it does because it drives the economy overall and that is whether or not there are job opportunities and there's [economic] growth in your area or maybe promotions and that sorta stuff.

Consequently, Ms. Williams spent extra instructional time telling students how economic concepts and principles directly affected their personal lives and their local economy multiple times during most class periods that I observed. Besides using props and treats, I observed Ms. Williams on several occasions try to help students understand difficult economic concepts by tapping into their prior knowledge before starting a lecture or class activity. For example, as an introduction to macroeconomic concepts, she displayed a list of economic words (e.g., *Bureau of Labor Statistics*, *economic policy*, and *recession*) on the overhead and told students to write down anything they already knew about each word. This allowed Ms. Williams the opportunity to correct misconceptions directly.

For Ms. Miller, *marginal thinking* was a common problem for most of her students and to aid student learning she said, "I just try to use plenty of good examples to help them see that, and I do visual examples to help them, and then I try to do tactile examples." However, more than specific economic concepts and skills, Ms. Miller thought the wide range of grade levels (i.e., Grades 9-12) in her class hindered student learning:

> There is a tremendous difference between the understanding of a 9th grader and the understanding of an 11th grader. They are just totally different. So when you have a room of 9th through 12th graders, I have to hit below the level of some of them and then sometimes it's just going to be above the level of some of them. That's all you can do.

One of the main ways Ms. Miller identified and remedied student misconceptions was through assessments because,

> Sometimes you don't know. I mean they can be looking you straight in the eyes saying 'yes, yes' but you give them a quiz or…even do a verbal assessment…you get the idea that they don't know what you're talking about. So you have to regroup and go back and find a different way of approaching it.

Impact of Instruction on Students' Attitudes and Knowledge

Initial Economic Attitudes of Students

The pre-survey administered within the first two weeks of school was designed to understand students' attitudes toward economics at the start of the study, using a Likert scale whereby 1 indicated "strongly disagree" and 5 indicated "strongly agree." See Table 6 for the pre-survey results for students in each teacher's class.

Table 6

Students' Pre-survey Responses

Survey Item	Ms. Williams (n = 15)	Ms. Miller (n = 18)	Ms. Levitt (n = 17)
I think economics is important.	3.93 (1.33)	3.83 (0.99)	4.53 (0.72)
I think economics is interesting.	1.60 (0.83)	2.67 (1.03)	3.35 (0.93)
Economics is easy for me to understand.	2.79[a] (1.12)	3.67 (1.03)	3.59 (0.71)
I consider myself knowledgeable about economics.	1.86[a] (0.66)	2.78 (0.94)	3.12 (0.99)
I think understanding economics is important to being a good citizen.	3.33 (0.90)	2.78 (1.00)	4.12 (0.86)
I think only politicians and business owners should understand economics.	2.07 (1.22)	2.17 (1.10)	1.71 (1.16)
Understanding economics helps make sense of the world.	3.20 (1.26)	3.72 (1.13)	4.06 (0.97)
Understanding economics is necessary for casting an informed vote in elections.	3.00[a] (0.88)	3.33 (1.28)	3.88 (0.78)
Understanding economics helps make better personal finance decisions.	4.13 (0.92)	3.89 (1.23)	4.71 (0.59)
I pay attention to economic events in the news.	2.07 (0.88)	2.44 (1.10)	2.59 (1.00)
I understand economic events in the news.	2.27 (1.22)	2.83 (1.04)	2.88[b] (0.96)
I use basic economic concepts to understand economic events in the news.	2.27 (1.28)	2.39 (0.85)	2.47 (1.01)

(*table continues*)

Table 6 (*continued*)

Survey Item	Ms. Williams (n = 15)	Ms. Miller (n = 18)	Ms. Levitt (n = 17)
I use the "economic way of thinking" to understand the world around me.	2.27 (1.28)	2.50 (1.20)	2.82 (0.81)
I talk about economics with friends and family.	1.53 (0.83)	1.72 (0.96)	1.76 (0.75)
I enjoy discussing economics in school.	1.53 (0.74)	2.33 (1.08)	2.47 (1.01)
I have had many opportunities to discuss economics in school.	2.13 (1.19)	2.28 (0.89)	2.94 (1.14)
Economics relates to my life.	2.87 (1.36)	3.17 (1.34)	3.94 (0.83)

Note. For each survey item, the mean score for each teacher's class is given, with the standard deviation in parentheses.
[a]For this survey item, n = 14 because one student did not respond.
[b]For this survey item, n = 16 because one student did not respond.

The pre-survey results suggested that students in all three classes shared similar attitudes toward economics in terms of perceived overall importance and helpfulness in making better personal finance decisions—the mean scores for these two Likert scale questions were among the highest scores for all three classes. This finding is not surprising considering the common misconception that economics pertains predominantly to money, which helps explain why most students defined economics in the short answer portion of the pre-survey by using the word "money." Also similar for all three classes was the lowest mean score for the Likert scale statement regarding students talking about economics with friends and family.

Another noteworthy finding from the pre-survey results was the gap between the mean scores of students thinking economics was important and students thinking economics was interesting. Students' beliefs that economics was important were supported by relatively high mean scores on statements about economics being important to citizenship, making sense of the world, casting an informed vote, and relating to students' lives. Low mean scores on students' beliefs that economics was interesting made sense in light of students not talking much about economics with family and friends, an expected finding when considering the research that suggests many students think social studies, including economics, is boring due in part to passive instructional practices that fail to make content relevant to students' lives (Doolittle & Hicks, 2003).

Post-survey Economic Attitudes of Students

This chapter has described the themes that emerged from observing the instructional practices of three exemplary economic teachers, including curriculum connections across grades and subjects and within the course, citizenship preparation, the application of economic reasoning tools, active learning strategies, and the incorporation of student-relevant examples. As just one of many ways of determining a teacher's instructional impact on students, I wanted to understand the how students' attitudes and knowledge of economics changed after a semester of instruction. Therefore, I administered the post-survey, described in the previous chapter, to students at the end of the semester. However, it is impossible to correlate the teachers' instructional practices to the post-survey results described below because of the many influences at work inside

and outside the classroom for each student. See Table 7 for the post-survey results for students in each teacher's class.

Table 7

Students' Post-survey Responses

Survey Item	Ms. Williams (n = 15)	Ms. Miller (n = 18)	Ms. Levitt (n = 17)
I think economics is important.	3.73 (0.88)	4.22 (1.31)	4.59 (0.71)
I think economics is interesting.	1.87 (0.64)	2.56 (1.38)	3.47 (0.94)
Economics is easy for me to understand.	2.80 (0.86)	2.94 (1.21)	3.65 (0.61)
I consider myself knowledgeable about economics.	2.87 (0.74)	2.72 (1.07)	3.35 (0.86)
I think understanding economics is important to being a good citizen.	3.13 (0.92)	3.33 (1.03)	4.35 (0.79)
I think only politicians and business owners should understand economics.	2.40 (1.12)	1.89 (1.18)	1.82 (1.42)
Understanding economics helps make sense of the world.	3.33 (0.90)	3.61 (1.20)	4.06 (0.90)
Understanding economics is necessary for casting an informed vote in elections.	3.27 (0.96)	3.24[a] (1.39)	3.94 (0.75)
Understanding economics helps make better personal finance decisions.	4.00 (1.00)	3.78 (1.06)	4.76 (0.56)
I pay attention to economic events in the news.	2.53 (0.99)	2.33 (1.19)	2.94 (1.03)
I understand economic events in the news.	3.07 (1.03)	2.83 (1.15)	3.47 (0.51)

(*table continues*)

Table 7 (*continued*)

Survey Item	Ms. Williams (n = 15)	Ms. Miller (n = 18)	Ms. Levitt (n = 17)
I use basic economic concepts to understand economic events in the news.	2.93 (0.96)	2.72 (1.13)	2.82 (0.88)
I use the "economic way of thinking" to understand the world around me.	2.20 (0.94)	2.78 (1.00)	2.88 (1.32)
I talk about economics with friends and family.	1.67 (0.98)	2.06 (1.00)	2.53 (1.01)
I enjoy discussing economics in school.	1.87 (0.92)	1.94 (1.26)	3.12 (1.27)
I have had many opportunities to discuss economics in school.	2.93 (1.39)	2.78 (1.35)	3.31[b] (1.30)
Economics relates to my life.	2.60 (0.91)	3.67 (1.46)	3.82 (1.07)

Note. For each survey item, the mean score for each teacher's class is given, with the standard deviation in parentheses.
[a]For this survey item, n = 17 because one student did not respond.
[b]For this survey item, n = 16 because one student did not respond.

After more than four months of economic instruction, students' attitudes toward the importance of economics and the degree to which they found economics interesting remained mostly unchanged for all three teachers. That is, all six mean scores either increased or decreased by less than or equal to half a point. The greatest mean score increase for the Likert scale statements varied by teacher. Ms. Williams' student responses reflected a greater self-perception of being more knowledgeable about economics and a better understanding of economic events in the news. Ms. Levitt's student responses also suggested that her students were better able to understand the news and enjoyed talking more about economics with family, friends, and in school. The

students in Ms. Miller's class showed the most gains in thinking economics was important to being a good citizen. The teacher whose students had the most decreases in post-survey scores was Ms. Miller. The mean scores for nine of the 17 statements decreased, eight of which, however, were a decrease of less than half a point.

In terms of the post-survey short answer results, most students in all three classes still thought the definition of economics and how economics related to their life centered around the concept of *money*. Money-related responses were also most frequently given to answer the question about how students might use their newfound economic knowledge and skills in the future. However, three to four students in the two business teachers' classes—Ms. Williams and Ms. Miller—added ideas about business to their definitions of economics, while six students in Ms. Miller and Ms. Lester's classes mentioned understanding the world in general. While the number of "I don't know" responses to the question about what economic events are currently being discussed in the news decreased by more than half, student responses represented a wide range of topics with gas prices, Ebola, and the Ferguson riots mentioned most often.

In terms of students' opinions about their experiences in the course and their opinions about their teachers' instructional practices, post-survey responses were again mixed. When asked what they enjoyed most about their economic class, seven of the 15 students in Ms. Williams' class who completed the post-survey said the discussions and learning future life skills; however, seven students essentially said nothing in particular. In Ms. Miller's class, 10 of the 18 students who completed the post-survey said the hands-on activities and learning future life skills and about the world, while five students

said nothing in particular. All the students in Ms. Levitt's class were almost evenly split between enjoying the following aspects of class: hands-on activities, learning future life skills and about the world, and Ms. Levitt herself. No students indicated that they did not enjoy any part of the course.

In response to the post-survey short answer question about how the economic class might be improved, Ms. Williams's students were mainly divided between including more hands-on activities and less time completing the online component of the course. The students in Ms. Miller and Ms. Levitt's classes also mainly suggested more hands-on activities, and in Ms. Miller's class, they also recommended less lecturing from the textbook. With regard to aspects of their teacher's instruction that were especially good and that might be improved, some of Ms. Williams' students thought her discussion practices were effective but her instructional clarity needed improvement. Ms. Miller's students said she was knowledgeable about economics and explained it well but should rely less on the textbook. Students in Ms. Levitt's class also thought she did a good job of breaking down the material to improve their comprehension and, while most students suggested there was nothing she should do to improve her instruction, a few students suggested easier work and more direct instruction.

To help better understand the negative changes in students' attitudes toward economics, I asked teachers to share their opinions during the post-interviews. When I asked Ms. Levitt for her reaction to the mean score slightly decreasing for the statements "Economics relates to my life" and "I think economics is important," she pointed to her students' life stage and the timing of the survey:

> Well, my initial reaction is that these are teenagers, so they could be taking a test and they're PMSing or they had a fight with their mom or their boyfriend. They might not have eaten dinner the night before. I mean, there's lots of things that I would say could impact that. I think that asking the question about economics is important to my life would be a question best asked at the end of the school year…

In response to me telling Ms. Levitt that her students still defined *economics* as mainly being about money despite her repeated efforts to make them realize economics is the study of choices, she also thought students would be in a better position to more accurately define economics at the end of the yearlong course:

> Economics and choices…is reiterated the entire school year…For instance, I did a survey yesterday on how many students have applied for a job and have been out looking for a job and can't find one. I had a pretty fair number who raised their hand, and then I would say 'Explain what's going on with that,' and we would start talking about different things but [then I would say] 'What the bottom line really is, it's about people's choices,' and so I always go back to people's choices.

She also thought students over emphasized the idea of money when defining economics because "they think everything is related to money." She explained,

> When we were talking about unemployment, for example, and that their age range has the largest unemployment rate right now, I had a student say 'I interviewed at a fast food restaurant…and the manager told me that he had applications coming in from teenagers and from people over 40 years old, and our company has decided that they're going to honor the applications of the over 40 year olds because they need the money more than the teenagers do, so the choice was made to hire the 40 somethings.' And so in their mind, the money is going to the 40 year olds. In that sense, money is related to that for them when they are talking about economics. Supply and demand: when they are talking about when they go to the store, and why are apples this price, that's money to them. And, it's this price because of the drought. Well, it's still money to them.

During the post-interview, I also shared with Ms. Miller the following statements for which her class's mean score decreased, albeit slightly:

- I think economics is interesting.
- Understanding economics helps me make sense of the world.
- I enjoy discussing economics in school.

Ms. Miller thought the declines in mean scores were also a function of students' life stage and their unwillingness to put in the work that her economic class required. She elaborated,

> These are high school kids. Some of them think [marking low Likert scores] was getting back at me. I know that. I know that they thought, 'Okay, I'm going to put down I hate this class and I don't want to be in this class.' I've heard them say that and 'I'm just going to fail it and take it on [State Online Course Program Name]. They say that's really easy.' I've also heard that, which is true. I can't argue with that, but, yeah, that's just how kids are. I don't take that personally as far as what they're doing because they're at this age where they're not supposed to like anything in school anyway. I know a lot of adults who hated economics when they took it in college. I personally found it interesting, but it's just your preferences. Again, it also goes back to some kids don't want to work hard.

Ms. Miller added that she thought her students had similar attitudes toward their core subjects. As for why her students predominately thought of money when defining economics, Ms. Miller linked it to the combined course format of economics and personal finance and the instructional pressures to link much of the economic content to personal finance to better prepare students for the WI$E test in April.

Like with the other two teachers, I presented Ms. Williams with the three post-survey statements for which her class mean scores decreased slightly:

- I think economics is important.
- I think understanding economics is important to being a good citizen.
- Economics relates to my life.

For the statement about being a good citizen, she attributed the decrease to her not using the word "citizen" but rather "member of the community":

> I think if you don't use the exact terminology, they are not transitioning. I think even though we were doing the lessons with the idea of them being a good citizen, I don't think I used that word 'citizen.' I don't say 'citizen.' I say 'consumer.' I say 'taxpayer.'…In my classroom, there's a lot of vocabulary that I don't use sometimes because I want them to understand it. I think if you start using some of those big words, they won't take ownership of it.

Because she believed that she did a good job connecting economic content to students' lives, she did not have a response for why her students' mean score decreased for the statement about economics relating to students' lives other than that they simply did not properly read and think about the statement. As for why students insisted on narrowly defining economics in terms of money, she agreed with Ms. Levitt in the sense that students "want to make it all about money" and she, like Ms. Miller, often tied it back to money for the students for them to "take ownership" of the economic content. That is, students related to economic content that was explained by using personal finance examples.

Student Gains in Economic Knowledge

To gauge how much economics students learned during the first half of the yearlong economics and personal finance course, I administered the Test of Economic

Literacy (i.e., Form A) in all three classes within the first two weeks of school during late August and again at the end of January (i.e., Form B). Because the teachers had not taught all the economic content of the course by the end of my observation period in January, I asked each teacher to identify which of the 45 test questions they had covered prior to the administration of the post-test. The pre/post-tests were then scored accordingly. The questions that were not yet covered by the teachers were not counted and thus did not impact the pre/post-test scores. Of the 45 questions, Ms. Levitt and Ms. Williams covered 19 questions, and Ms. Miller covered 23 questions. While there was mostly overlap in the teachers' economic content coverage, there were a few questions that differed among the teachers. Ms. Levitt's average class score on the pre-test was 46 percent and her average class score on the post-test was 57 percent—an increase of 11 percent. Ms. Miller's average class score on the pre-test was 39 percent and her average class score on the post-test was 59 percent—an increase of 20 percent. Finally, Ms. Williams' average pre-test score was 43 percent and her average post-test score was 59 percent, with an increase of 16 percent.

As previously noted, the degree to which these teachers' instructional practices caused increases or decreases in students' favorable attitudes toward economics and students' knowledge of economic content remains inconclusive due to the myriad of variables at work in the students' lives in and out of school. For example, from my own observations as I circulated around the room while the students were taking the post-test, there were two students in Ms. Williams' class that had finished bubbling in the answer sheet after about three minutes of beginning the post-test. The average time it took

students to complete the post-test was 45 minutes. Similarly, in Ms. Miller's class, one student was finished within a few minutes of beginning the test, and two other students were observed quickly filling in the second half of the answer sheet without looking at the questions when they realized that they would not finish before the bell rang and consequently would have to stay after class to finish the post-test.

To understand the teachers' perspectives on the limited gains in economic knowledge, I asked teachers a series of related questions during the post-interview. In terms of economic content coverage, Ms. Levitt and Ms. Miller both said that they would be teaching the bulk of macroeconomics and international economics after the students took the WI$E test in April; therefore about half of the test questions assessed economic content not yet instructionally covered in class. In addition, they said that much of the microeconomic content would be revisited throughout their personal finance instruction because it laid the foundation for many of the personal finance concepts and skills—hence, the reason microeconomics was covered during the first part of the yearlong course. Ms. Williams, on the other hand, said she had covered most of the economic content but would revisit it in her personal finance instruction. Moreover, after the WI$E test in April, Ms. Williams planned to assess what students did not fully understand and would reteach accordingly in preparation for the final exam.

When asked about the appropriateness of the Test of Economic Literacy as an assessment instrument for their students, all three teachers thought the test was too difficult for a more skills-based economic course geared largely toward sophomores.

Suggesting that the test was not "age appropriate or class appropriate," Ms. Williams explained,

> The vocabulary was not the level at which I feel like they comprehend. I think the concepts were things that we are teaching, but I think the word choice was not the word choice for them to comprehend what the question was actually asking…The older we get, the more understanding, the better vocabulary we have. I think I always try to be sure that I'm teaching to the middle of the group. Because we don't have any AP sections of this, it's important that we're not using terminology that they just can't get.

Ms. Williams felt that because she purposely did not always use "technical" economic words in order to increase students' "ownership" of the content, students also struggled to answer the test questions: "We have talked about the technical words, but we've not spent the time on those words. We spent the time on the application of [the words] and how they're going to best understand [the words] in their little 10th grade minds." Ms. Williams thought the test was more suited for an AP economic course geared toward older students. Apart from the test, Ms. Williams also thought her class average post-test scores did not reflect how much her students really knew about economics because "students don't take stuff seriously. I think that they don't take things seriously, no matter how we beg and barter."

While not as concerned about the technical language used in the test, Ms. Miller thought the sentence structures were somewhat confusing: "I actually had to go back and read it twice in order to decipher exactly what it meant" and "some of the answers were so similar." Furthermore, Ms. Miller thought the test was more appropriate for a yearlong economic course:

> This instrument seems like it's geared more for a yearlong or a lot longer than what we actually taught. There's no way we could cover all the questions that are on that in the frame of time that we had. That would be impossible.

Ms. Miller also shared with me that a couple of her more advanced students told her that they felt "defeated" when they took the post-test since so much of the content had not been covered thus far in class. Ms. Levitt agreed that the test was "really only taking a snapshot of the year with the students," but she also commented on the difficulty of the test in terms of it requiring higher level thinking that her basic economic course was not designed to develop:

> Sometimes in some of these questions, it could be like a three to five-step process to get to the answer, so they had to go backwards and figure out the connections. That makes that a higher level thinking question. Of course, there were questions on there that they have not even learned about yet, so they couldn't accurately answer that with any confidence at all. They might have guessed and got it right, but they didn't know it.

Summary of Findings

In this study, the factors that mostly notably shaped the teachers' personal orientations toward economics were their personal and professional life experiences, disciplinary background acquired through coursework, political leanings, and beliefs and instructional goals pertaining to a basic economic course. Each of these factors influenced the teachers' instructional practices to varying degrees, with the least impactful factors being their disciplinary background and political leanings. Horizon content knowledge was regularly demonstrated by teachers' connecting economic content

to other multi/interdisciplinary subjects as well as to economic content within the course that would be officially taught later in the course.

The teachers in this study demonstrated specialized content knowledge by using economic content to prepare students for citizenship, predominantly personally responsible and participatory citizenship, by regularly incorporating current events and informed voting practices into their economic instruction. Economic reasoning skills instruction was also a staple in the teachers' demonstration of specialized content knowledge, especially the EWT. Lacking, however, were learning opportunities to engage in authentic discussions about noncontroversial and controversial economic issues. A variety of active learning strategies geared toward students' lives and economic misconceptions were used by the teachers, informed by their knowledge of content and teaching and knowledge of content and students. Modest gains in students' economic attitudes and knowledge existed midway through the yearlong economic and personal finance course.

CHAPTER V

DISCUSSION

The purpose of this study was to gain an in-depth understanding of the PCK of secondary economic teachers. In the previous chapter, the findings from this "wisdom of practice" study (Shulman, 1987; Wineburg & Wilson, 1988) were detailed according to the research questions presented in the introductory chapter. In sum, several factors seemed to shape the teachers' personal orientations toward economics with varying degrees of influence on their instruction. Additionally, each of the three award-winning economic teachers demonstrated their pedagogical content knowledge (PCK) in similar ways, guided by their horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students.

Each teacher's personal orientation toward economics was defined, in part, by valuable life and professional experiences, including extensive professional development in economic education. Contrary to existing literature, the disciplinary background of the two Career and Technical Education (CTE) business teachers and one social studies teacher appeared to only marginally affect their instruction. While Ms. Williams, a CTE business teacher, used extensive instructional examples about industry to explain economic concepts and principles, Ms. Miller, the other CTE business teacher, did not.

These classroom observations were made in light of both teachers suggesting that economics was naturally more suited toward present-day business applications rather than other social studies subjects such as history. In addition, despite all three teachers regularly making interdisciplinary and multidisciplinary connections to economic content, Ms. Levitt, the social studies teacher, was observed integrating economics into other social studies subjects only slightly more than the CTE business teachers, typically in the form of class and homework assignments.

For the most part, the teachers' political leanings, as defined by their party affiliation, preferred media sources, and common voting issues, had a minimal impact on their instruction. That is, a balance between presenting conservative and liberal viewpoints was typically achieved. With regard to their beliefs about the economic course, all three teachers believed that the course should be a graduation requirement in order to prepare students for citizenship and adulthood. The teachers were also in favor of the yearlong course format wherein the semester economic course was combined with the semester personal finance course because of the interrelated nature of the content areas. However, all three teachers believed that the economic course should be divided into two sections based on student ability levels and economic instructional goals: a basic, skills-based course that emphasized economic life skills and an advanced, more academic course that delved deeper into the theoretical side of economics. In keeping with their general teaching philosophies, Ms. Levitt and Ms. Williams' instruction was mostly student-centered, and Ms. Miller's instruction was a combination of student-centered and teacher-centered.

All three teachers believed that horizon content knowledge was important for economic teachers to have because economics was integrated in everyday life and most school subjects, thus was properly interwoven throughout the state's Grades K-12 learning standards. Teaching new economic content by connecting it to prior knowledge established in other social studies and core subjects was an effective strategy, according to the teachers and social studies literature (Bain, 2005), yet the degree to which history and mathematic content, for example, was integrated into lectures, discussions, and assignments varied among the teachers. Far more often, though, the teachers intentionally established prior knowledge in economics by foreshadowing, in simple and nontechnical language, the more complex economic content that would be formally introduced later in the course.

The teachers demonstrated their specialized content knowledge by delivering economic instruction that sought to prepare their students for citizenship and to develop students' economic reasoning skills. Two primary citizenship skills taught were casting informed votes using economic reasoning tools and understanding the economic and personal impact of current events. Most controversial issues were avoided, but when included, were cautiously discussed using an economic lens. Authentic discussions were mostly lacking due to concerns about pacing guides and classroom management. Economic reasoning instruction included hands-on activities that helped students utilize the following economic reasoning tools: the economic way of thinking (EWT), cost-benefit analysis, PACED decision making model, supply and demand graphs, and the production possibilities frontier graphs. Variations of the EWT, cost-benefit analysis,

and PACED decision making model were used throughout my more than four months of observations, and coverage of supply and demand and production possibilities frontier graphs ranged from mathematical to conceptual to a basic introduction.

To different extents, all three teachers demonstrated knowledge of content and teaching by employing various active learning instructional practices, including simulations, political cartoons, games, and technology-related activities. More than any other aspect of PCK, the teachers' knowledge of content and students characterized their instructional practices, which were highly student relevant and included economic analogies, simplified economic concepts, and real-world economic examples based on their students' demographics and life experiences. Student misconceptions of economic content were identified and primarily corrected with repetition and the activation of prior knowledge.

As suggested by the post-survey of students' attitudes toward economics, the degree to which students thought economics was important and interesting remained mostly unchanged from the beginning of the semester. The aspects of the teachers' instructional practices that the students enjoyed most included classroom discussions, learning future life skills, and hands-on activities. Several students in Ms. Williams and Ms. Miller's class said that they did not enjoy anything in particular about the class, while no students said the same in Ms. Levitt's class. In response to the limited increases in students' attitudes toward economics and unfavorable survey comments, teachers' explanations included the immaturity of high school students, the timing of the survey in a yearlong course, and the students' unwillingness to put forth the effort required in an

economic class. The limited gains in students' economic knowledge as measured by the Test for Economic Literacy (TEL) were suggested to be the result of incomplete economic content coverage in a yearlong course and test questions that were too difficult for a skills-based course geared toward sophomores.

The PCK theoretical framework used in this study expedited a subject-specific way of understanding the various domains of teacher knowledge and skills needed to effectively teach secondary economics. See Figure 6 for a graphic organizer of the most notable components of the three teachers' PCK and personal orientations toward economics that emerged from the study's findings.

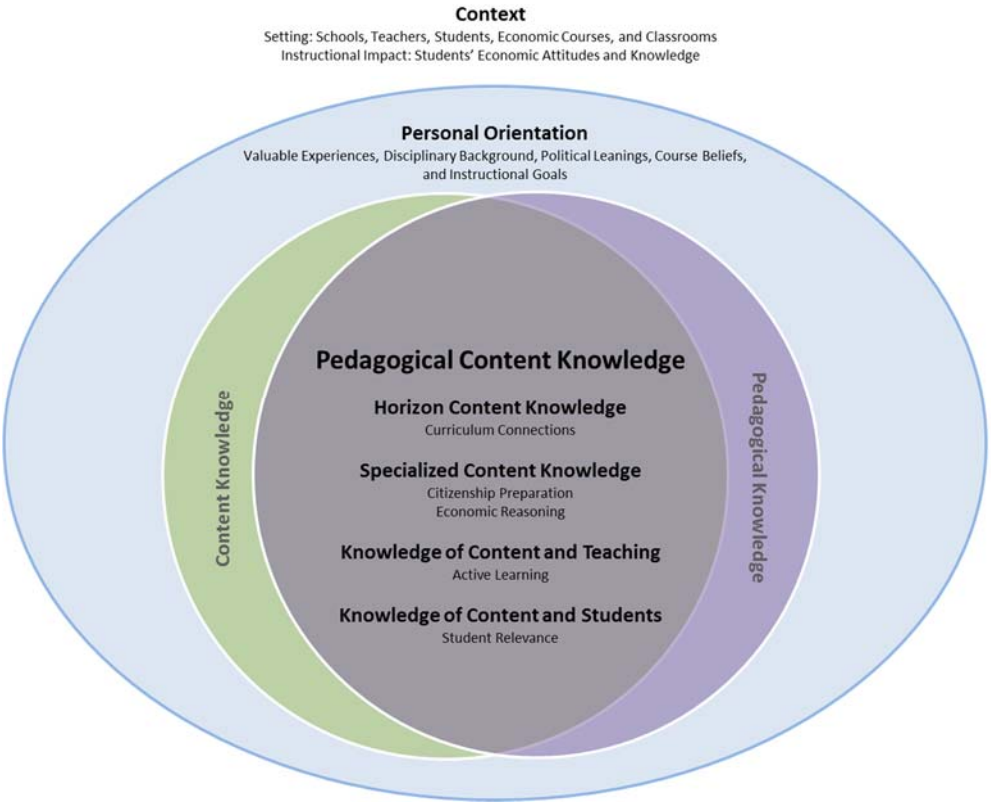

Figure 6. A Visual Representation of the Teachers' PCK and Personal Orientations toward Economics.

In the remainder of this chapter, I will discuss my analysis and interpretation of these findings as they relate to the teachers' PCK in economics, both as individual cases and collectively as three cases (Stake, 1995), interspersed with influences of their personal orientations toward economics. Related implications of the findings for teachers and teacher educators are then discussed. Existing literature is used throughout the discussion to critically analyze and situate the findings in a broader educational context. This chapter is then concluded with a discussion of the study's limitations and recommendations for future research.

Analyzing the Aspects of PCK Present in the Teachers' Economic Instruction

The overarching research goal of this exploratory study was to better understand the PCK of three award-winning secondary economics teachers. Such research goals are often required when translating generic pedagogical knowledge into specific instructional practices uniquely effective in teaching the contents of particular discipline (Shulman, 1987; Wineburg & Wilson, 1988). The systematic investigation strategies employed in this study attempted to satisfy Shulman's (1987) original call for "codified representations" of PCK in economics, in hopes of contributing to the economic education standards of practice utilized by preservice and inservice teachers and moving toward a more definitive practice-based theory of economic knowledge and skills for teaching (Ball et al., 2008; Heibert & Morris, 2012). Hence, capturing and reporting detailed accounts of "PCK in action" (Hanuscin, Lee, & Akerson, 2010) during classroom instruction consistently motivated me as a researcher.

As such, this wisdom of practice study was not evaluative in nature but rather sought to gain an in-depth understanding via thick descriptions of what occurred in these three classes (Geertz, 1973; Stake, 1995). As a former director of economic education, it was difficult at times to not evaluate the teachers' instructional practices according to a predetermined set of standards. Therefore, I periodically reminded myself and the teachers that my researcher intentions were not to evaluate their teaching but rather document effective economic instructional practices in the nuanced context of each teacher's group of students and school setting. Therefore, teacher-directed instructional practices such as lecturing, traditionally deemed as ineffective by many educational stakeholders, were analyzed from as many angles as possible in order to not immediately dismiss them as less effective than more student-centered instructional practices. However, while not an evaluative study per se, rigorous analysis necessitated some level of critique in order to offer the most plausible interpretations. In the remainder of this section, I will analyze the overarching themes that emerged from the data using the PCK framework that guided this study. The impact of the teachers' personal orientations toward economics on these five instructional practices is interwoven throughout the discussion that follows.

Connecting the Economic Curriculum to Other Grades/Subjects and Within the Course: Horizon Content Knowledge

All three teachers believed that connecting economic content to other subjects across grades was an important and unavoidable economic instructional practice, based on the inherently multidisciplinary and interdisciplinary nature of economics and the

importance of activating students' prior knowledge when teaching new economic content. Ms. Miller and Ms. Williams, the CTE business teachers, claimed that economics naturally had more connections to the business world than other social studies subjects. However, of the three teachers, only Ms. Williams emphasized the economic content connections to business more than other disciplines in her class discussions, lectures, and assignments. Ms. Miller and Ms. Levitt, the social studies teacher, made observably less curriculum connections to business. Also surprising, Ms. Levitt made only slightly more curriculum connections to other social studies disciplines than the other two teachers, typically as part of class assignments such as the Federal Reserve System Webquest and the Comparative Economic Systems group project. These findings both support and refute the social studies research that suggests a teacher's disciplinary background, a factor that often shapes teachers' personal orientations toward a subject, significantly influences their instructional practices (Wilson & Wineburg, 1988).

In fact, the predominant types of curriculum connections made by each teacher varied. Based on my observational data, Ms. Williams demonstrated horizon content knowledge most often by connecting economic content to science and English. For example, the integration of science was evident in the environmental simulation and political cartoons that she used to teach about the economic concept of *tragedy of the commons* and the EWT principle about *incentives*. Economic content connections to English were motivated, in part, by her administrators' school-wide push to improve literacy skills. Ironically, Ms. Miller's economic curriculum connections were mostly made to historical events while lecturing, usually consistent with the descriptions in the

students' textbook. Despite her social studies disciplinary background in history, Ms. Levitt demonstrated a relatively even mix of curriculum connections to business, history, science, and English. Both Ms. Miller and Ms. Levitt also depended heavily on economic content connections to mathematics when teaching about *supply* and *demand*, and all three teachers depended on mathematics when teaching about statistical economic data such as *inflation* and *unemployment rates*.

From a PCK perspective, one could argue that teachers who demonstrate horizon content knowledge by connecting economic content to multidisciplinary and interdisciplinary grades and subjects on a regular basis are likely to be effective teachers, at least to some degree. However, in Ms. Williams' case, she avoided making too many economic curriculum connections to history and mathematics because she claimed, based on her school's low standardized test scores, that her students would struggle even harder with economic content if she added another layer of unfamiliar or difficult history and mathematic content. She believed that to integrate these subjects into her economic instruction, she would have to trade-off using class time to teach economic content with using class time to reteach the history and mathematic content many students failed to learn in other grades and subjects before economic curriculum connections could be made.

While a valid concern in an already overcrowded economic pacing guide, one might argue, however, that providing students a second opportunity to learn history and mathematic content might be the more sensible choice in light of a school-wide effort to increase history and mathematic test scores. For example, researchers have found that

students who played the Stock Market Game™, an online simulation commonly used by economic teachers including the teachers in this study, had higher achievement scores in mathematics than students who do not play the game (Hinojosa et al., 2009). Similarly, students of geography teachers who incorporated increased levels of mathematic instruction were found to have improved learning outcomes in both subjects (Dorn et al., 2005). Nevertheless, from a practical standpoint, these instructional trade-off decisions cannot be universally prescribed but rather are best made in the context of each teacher's personal assessment of students' needs and ability levels. However, I do suggest, as these three teachers demonstrated most of the time, that when teachers decide to make economic curriculum connections to other subjects and grades, that they take enough instructional time to clearly explain the points of integration as opposed to just casually mentioning the points of integration as somewhat of an afterthought. This integration intentionality supports the economic education research that suggests interdisciplinary instruction, whereby non-economic social studies teachers integrate economics into history and geography classes, for example, is most effective when teachers do not treat economics as a mere side note (Schug & Niederjohn, 2008).

Two other important pedagogical outcomes were achieved by the teachers' demonstration of horizon content knowledge via curriculum connections. The first beneficial outcome was students' engagement with high-level challenge tasks (Miller, 2003), which inherently occurred when students were required to make economic curriculum connections to content learned in other grades and subjects. Making such multi/interdisciplinary connections where students have to critically think about

economic content as it pertains to other subjects should be a defining feature of rigorous academic achievement and disciplined inquiry (NCSS, 2013; Newmann, Marks, & Gamoran, 1996). Additionally, in order for economic teachers to prepare students for life after high school, providing learning opportunities that develop higher-order thinking skills is important in a 21st century economy that requires workers to engage in more cognitively demanding job tasks.

The second beneficial outcome achieved by the teachers' instructional practices rooted in horizon content knowledge was the opportunity for teachers to utilize authentic instructional practices that provided learning activities for students to use real-world interdisciplinary and multidisciplinary perspectives and inquiry often required to understand complex phenomena and current events (NCSS, 2013; Newmann & Wehlage, 1993). As an illustrative example, Ms. Levitt's Comparative Economic Systems group project required students to use higher-order thinking skills to make economic connections to other social studies subjects such as geography, sociology, and government in order to draw informed conclusions about the differences between modern-day command, traditional, and mixed economies, represented by North Korea, Chad, and the United States, respectively. Moreover, according to the Partnership for 21st Century Skills (2002), the current U.S. workforce requires both technical and reading skills. Therefore, economic teachers might also consider integrating literacy skills when reading current event articles in economics that forecast economic trends upon which business decisions are made as another way of providing students with real-world learning opportunities. As an added benefit from an academic perspective, there is

some evidence that suggests authentic instructional practices are generally linked to greater increases in student learning as measured by standardized test scores (Newmann, Marks, & Gamoran, 1996; Saye et al., 2013).

A last important, yet unexpected, finding pertaining to how all three teachers' regularly demonstrated horizon content knowledge was in their economic curriculum connections to other economic content within the same subject. One such illustrative example was observed when Ms. Williams led a nontechnical discussion about the *circular flow of money in a market economy*, a macroeconomic model officially introduced later in the semester, by asking students how they personally contributed to the economy over the long Labor Day weekend. This aspect of PCK was demonstrated by teachers when they used familiar, nontechnical language to describe and foreshadow complex economic content that would be officially introduced weeks or months later in the economic course. This intentional creation of prior knowledge in economics served as the foundation upon which they later build more difficult economic concepts and skills, while reducing the cognitive load (Kirschner, Sweller, & Clark, 2006) students would likely experience. The teachers agreed that this purposeful foreshadowing of economic concepts in lectures and activities that have not yet been officially introduced was facilitated, in part, by the interdependent nature of many economic concepts that prohibits them from being taught in isolation, deep economic content knowledge, and years of experience teaching economics.

Preparing Students for Democratic Citizenship: Specialized Content Knowledge

All three teachers believed that an important economic instructional goal should be forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters (Highsmith, 1990; Schug, Dieterle, & Clark, 2009). The teachers' prioritization of teaching skill-based economic content for citizenship preparation is in agreement with the findings of other studies focused on economic instructional goals (Schug et al., 2009; Vredeveld & Joeng, 1990). The most common ways these teachers attempted to prepare their students for citizenship were casting informed votes, understanding current events, and using economic reasoning tools to make life decisions. Making informed and productive decisions was by far the most common economic theme for all three teachers throughout the course of the semester that I observed. However, teaching students to engage in authentic discussions and discuss controversial issues were two instructional practices that were infrequently demonstrated, which is commonly reported for most teachers across other areas of social studies (Bickmore & Parker, 2014; Hess, 2002; Hess, 2005; Kelly, 1986; Parker & Hess, 2001). One way that teachers achieved this important instructional goal of citizenship preparation was by regularly including current events into their instruction and assignments. This instructional practice required the teachers to be thoughtfully adaptive (Duffy, 2005; Fairbanks et al., 2010) in their day-to-day instructional practices because of the unpredictable nature of breaking news headlines, such as when Ms. Levitt covered the Ebola outbreak and Ms. Williams covered the Ferguson, Missouri riots. The inclusion of current events also meant that the teachers had to be flexible in their weekly lesson

planning and make instructional decisions about which economic content would consequently need to be replaced or skimmed over.

The teachers included this real-life economic content coverage into their instruction in multiple ways. One way was by sharing a synopsis of the latest news headlines—local, state, national, or global—at the beginning of class, followed by questions used to scaffold or assess students' understanding of related economic content and to make personal connections. All three teachers were masterful in using seemingly unrelated news stories to help students see the impact of the events on the economy and on their personal lives. One explicit example was when Ms. Levitt used the bomb threat incident that happened at Bailor High School to review the EWT principles of *choices*, *opportunity cost,* and *unintended consequences* while also emphasizing the personal impact on the students' lives as a result of tax payer dollars being deferred away from their educational experience (e.g., buying personal laptops for students) to paying police officers and a SWAT team to search the school for the alleged bomb. As a current events homework assignment, teachers regularly required students to read and summarize news articles, always discussing how the events were related to what they were learning about in economics and to their personal lives. The teachers seemed to take pride in showing students the economic impact of news stories that seemed unrelated to economics, at first glance, such as when Ms. Williams discussed the economic impact of the NFL controversy over deflated footballs. The teachers also used the Stock Market Game™ instructional resource as an incentive for students to take an invested interest in economic

current events (Ayers, 2012) and to use their cell phones to read economic and business news as it related to their stock investments.

In addition to reinforcing and assessing economic content and personalizing economic instruction, the inclusion of current events into the teachers' instructional practices afforded the added benefit of naturally encompassing multiple perspectives and critical literacy. That is, by students understanding the economic connections of news stories about the legalization of marijuana and the Ferguson, Missouri riots in Ms. Williams' class, for example, they were entertaining an economic perspective in addition to social and security perspectives often reported in the media. Using an economic lens to challenge the assumptions of news stories and political cartoons as they were reported also appeared to develop students' critical thinking and critical literacy skills as well as their ability to better articulate opinions and arguments concerning economic issues and policy-making (Davies, 2006), skill sets required of democratic citizenship in the information-saturated 21st century.

Casting more informed votes was another important economic instructional goal for these teachers, and as Ms. Levitt stated, uninformed voting was the equivalence of irresponsible citizenship. Understanding economic issues and policy proposals will continue to be important in the 2016 Presidential Election, as the U.S. economy is still trying to make a comeback after the recent Great Recession. The most instructive example of using economic content to help students cast more informed votes occurred in Ms. Williams' class when she modeled how to use a modified version of the PACED decision making model to decide which town council candidate to elect. Throughout this

lesson, Ms. Williams helped students see the impact of the candidates' economic platforms on their personal lives, such as when she suggested that one candidate's background in economic development (i.e., bringing businesses to the area) not only created jobs for high school students but also increased the corporate tax base from which more education expenditures could be made, such as repairing the roof of Langley High School. Ms. Williams also attempted to affirm diversity and create tolerance for differing political opinions by highlighting the fact that students chose different candidates based on different criteria, despite reading the same information about the candidates.

All three teachers were adamant about not disclosing their political affiliation with students and attempting to strike a balance between conservative and liberal perspectives when discussing current events, although they admitted that political bias was always present in their instruction despite how hard they tried to mask it. For the most part, the teachers were successful in achieving their goals of nondisclosure and a balanced political approach during my four months of observations, despite their own personal orientation towards economics. Nevertheless, contrary data was also collected such as when Ms. Miller shared her more liberal fiscal views on income inequality and when Ms. Levitt shared her more conservative fiscal beliefs about less government regulation and taxation. However, simply as a function of the state's learning standards and most economic textbooks, macroeconomic content that explains the beneficial *roles of government in a market economy* and *public goods and services* inherently offered a more liberal perspective, especially since all three teachers acknowledged the benefits of working for the state as a public school teacher.

While the teachers all agreed that expressing their political economic opinions along with how they reached those conclusions was an important citizenship lesson, they did so sparingly. The primary reason cited for this overarching instructional decision was because they wanted students to form their own opinions without undue influence, especially in a conservative part of the country where parents were not always welcoming of dissenting viewpoints. Despite some education scholars suggesting that teachers should more fully disclose their political leanings in class (Journell, 2011), I would agree with these three teachers' decision to err on the side of caution, especially in light of Ms. Williams and Ms. Levitt sharing the fact that they had already been called into the office by an administrator to help resolve parent-related complaints. In fact, in support of these findings, research shows that most teachers attempt to keep their political opinions private for a number of reasons, including the ones expressed by the teachers in this study (Hess, 2004). Therefore, I believe that the degree to which teachers self-disclose their political opinions should depend on the educational milieu and explicit administrative support on a case-by-case basis.

Along the same lines, the amount of economic content coverage devoted to discussing controversial issues should not be a one-size-fits-all instructional decision, despite economic education scholars (Davies, 2004; Hahn, 1991; Puglisi, Schurr, Booth, & Brandmeyer, 1993; Schug & Clark, 2001) and social studies scholars (Hess, 2002; Kelly, 1986) strongly recommending the inclusion of controversial issues. Also in the context of a conservative region of the state, these teachers chose to steer clear of discussing controversial issues, beyond an economic perspective. For instance, Ms.

Williams required her students to use a modified version of the PACED decision making model to complete an assignment on entitlement spending and discuss often controversial welfare programs from which many of her students' families received benefits. In a similar way, Ms. Williams limited her students' discussion about the Ferguson, Missouri riots to how the protest's destruction of public and private property impacted the economy, specifically the decreased Black Friday sales in Ferguson. However, consistent with research on discussing controversial issues in schools (Hess, 2004), the teachers mostly avoided discussing traditionally controversial issues (e.g., gay and lesbian right, religion, and abortion) for a variety of reasons including fear of parental complaints, lack of administrative support, and fear of students making offensive and ignorant comments.

In a sense, discussing controversial issues using only an economic perspective is better than not discussing controversial issues at all in conservative school districts with unspoken rules of avoidance. Yet, one could easily raise questions about a larger dilemma of public education not meeting its civic mission of developing informed and tolerant citizens in an ever-increasing pluralistic democracy. Moreover, one could easily argue that if non-college bound students are not exposed to divergent viewpoints in high school, schools are somewhat complicit in perpetuating stereotypes and prejudices that often stem from a lack of understanding or exposure to people's choices that differ from their own, crippling a democratic society built on dissenting viewpoints and the fundamental premise of compromise. This is particularly concerning in light of the literature that suggests classrooms have the potential to offer productive public spaces for students to deliberate and learn to engage in civil exchanges of differing opinions

(Englund, 2006; Avery, Bird, Timstone, Sullivan, & Thalhammer, 1992), critically important democratic citizenship skills.

The question then becomes, under what circumstances could the teachers in this study have been more inclined to include discussing controversial issues in their instructional goals and practices? For starters, school administrators would need to explicitly support a school curriculum that included controversial issues for educative purposes, thereby necessitating a fair and balanced analysis of each issue by inviting multiple perspectives from both dominant and marginalized public discourses. This type of administrative support may have been the very catalyst needed by Ms. Williams to overcome her fear of explicitly inviting students to express anti-police public opinions about the Ferguson, Missouri riots that protested police unjustly killing an unarmed African-American male. In other words, with administrative support, Ms. Williams might have required other students to share an opposing viewpoint, whether they agreed or not, with the students who openly shared their pro-police stance, despite Ms. Williams keeping her own pro-police opinions out of the discussion. This more balanced discussion would have been appropriate for an economic class because drawing informed conclusions about the economic impact of current events requires analysis using multiple perspectives on an issue. This type of invitation of multiple perspectives by teachers playing "devil's advocate" should become routine instructional practices when discussing any controversial issue, whereby teachers use their authority to ensure all student voices are heard (Reich, 2007).

Another solution might include teachers using more economic reasoning tools in similar ways as was observed in this study. For example, using cost-benefit analysis to unpack and discuss any controversial issue automatically requires students to think of multiple perspectives in the form of pros and cons. However, to be clear, while I am personally an advocate for including controversial issues in economic courses, the lack of inclusion by the teachers in this study stands to reason due to a variety of justifiable constraints. In no way do I wish to imply that these teachers could easily have done otherwise.

Perhaps a more reasonable critique of the teachers' economic instructional practices was the lack of authentic discussions, which all of the teachers attempted but with mixed results. Most of the "class discussions" that I observed consisted of teachers asking a question, often a mix between recall and critical thinking questions, and one student giving an answer usually consisting of only a few words, resembling more of a "popcorn" question and answer session. Ms. Levitt usually allowed enough wait time for students to answer, although Ms. Miller and Ms. Williams often asked more rhetorical questions followed by little to no wait time. According to Hadjioannou (2007), authentic discussions are defined as "classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions," an uncommon instructional practice for most teachers, even teachers who have been formally trained to conduct such classroom discussions (Bickmore & Parker, 2014).

However, on two occasions, I did observe Ms. Williams engaging students in an authentic discussion, once on the economic impact of crime and another time on entitlement spending. Ms. Williams commented after class that she was surprised how engaged the students were and felt a little uncomfortable since the discussion took a "life of its own," which we both agreed was a good thing. Often without Ms. Williams interjecting a comment or question, students offered comments to the class discussion by referencing and sometimes even challenging what other students had said. One student even searched for a related economic statistic on the Internet, which she commonly did, and offered it as real-time evidence to support a comment she had made earlier in the discussion. This co-construction of economic knowledge was impressive, in my opinion. In fact, with regard to the aspects of Ms. Williams' instruction that were especially good, several students listed her classroom discussion practices on the post-survey. Despite their limited use, all three teachers did agree that teaching students to engage in authentic discussions was an important citizenship skill, but they often avoided doing so based on the time consuming nature of such discussions as well as potential classroom management issues.

In conclusion, how economic teachers should prepare students for democratic citizenship might best be answered by first posing the question: What types of citizens should teachers try to develop? In their famous study, Westheimer and Kahn (2004) concluded that teachers generally prepare students for three types of citizenship: personally responsible, participatory, and justice-oriented. Generally speaking, the three teachers in this study used their economic instructional practices to develop personally

responsible citizens who were able to understand current events to make productive decisions and cast informed votes. To a lesser degree, students in these three economic classes were prepared for participatory citizenship by the teachers either discussing the importance of participating in community-based projects, such as in the school-wide campaign of combatting domestic violence at Langley High School, or participating in FBLA and class projects, such as in Ms. Miller's class where students researched and recommended ways to environmentally improve the public spaces in town.

None of the teachers' economic instructional practices were geared toward developing students' justice-oriented citizenship skills, as might be expected in a conservative part of the country. This finding, however, exists in the context of social justice and civic education literature that argues even elementary school students can learn to engage in social justice projects (Bickmore, 1999). At most, these teachers mentioned social justice issues without any real discussion in order to at least heighten students' awareness, often a first step for taking action at a later date. Understandably, the teachers cited similar concerns about including social justice action projects in school districts where such learning objectives were uncommon and often not support administratively. However, the degree to which these teachers' personal orientations toward economics, particularly their own political leanings, also affected their instructional decisions to not prepare students for becoming social change agents could not be determined with any certainty.

Teaching Students to Use Economic Reasoning Tools: Specialized Content Knowledge

Many economic education scholars insist that effective economic instruction is comprised of frequent and regular learning opportunities for students to develop and practice using economic reasoning skills (Lopus, Morton, & Willis, 2003; VanFossen, 1995; Wentworth & Schug, 1993). Some economic education scholars even go as far as to suggest that the primary goal of economic education should be to teach students economic reasoning skills, which essentially teach students to "think like an economist" (Schug & Western, 1990; Siegfried et al., 1991; Wentworth, 1987). From modeling how to use a modified version of the PACED decision making model to elect town council members to weaving in the EWT into a discussion about a bomb threat at one of the schools, these three teachers appeared to effectively develop their students' economic reasoning skills during my semester of observations in a way that would serve them as adult citizens.

The most common economic reasoning tools, or variations thereof, used in all three classes were the following: EWT principles, cost-benefit analysis charts, PACED decision making models, supply and demand graphs, and production possibilities frontier graphs. All of these economic reasoning tools required the teachers to have a particular type of specialized content knowledge centered on the syntactic structure of economic content—that is, what counts as knowledge and inquiry in economics (Ball & McDiarmid, 1990; Schwab, 1964; Shulman, 1986). This type of disciplinary understanding of economic content also provided students with a mental framework or

schema to keep all the economic concepts and their innate relationships straight, which was perhaps most comprehensively achieved by the collection of EWT principles. The EWT also served as a heuristic tool for turning economic concepts into a systematic approach to gaining a deeper understanding of the world.

Comprised of basic economic concepts, the EWT is similar to historical thinking in that both skills sets require an understanding of the nature of knowledge and how knowledge is created in both economics and history (Wentworth, 1997; Wineburg, 1999). As with historical thinking instruction, economic thinking instruction requires economic teachers to have a clear understanding of this syntactic structure of content knowledge in economics, and when combined with PCK, enables them to teach students how to think like an economist (CEE, 2000; Seixas, 1998; Wilson & McDiarmid, 1996). Teaching students the EWT has the added benefit of proving to students that economics is an important life skill that allows them to gain a clearer understanding of personal and societal problems and thus find more productive solutions (Wentworth & Western, 1990). Additionally, such economic instructional practices correct students' misconceptions that learning economics simply means memorizing economic definitions and facts and drawing supply and demand curves, perhaps igniting an interest in taking another economic class in the future or even pursuing a career in economics. Through assignments and class discussions, the teachers in this study were able to make students' economic thinking explicit by using the EWT, which also aided them in identifying and correcting student misconceptions to clear barriers of misunderstandings for learning new economic content.

Moreover, the teachers also regularly made their own EWT explicit to students as they modeled how to use the principles to more deeply understand current events. In this way, the EWT was used as a critical literacy tool to unpack and challenge the assumptions of often complex economic texts, lending this economic reasoning tool as a way to aid Common Core State Standards initiatives in teaching literacy across content areas. In fact, a similar instructional case could be made for all the economic reasoning tools used in the three classes, particularly the cost-benefit analysis chart and the PACED decision making model, in the sense that they all inherently require students to engage in higher-order thinking and critical thinking while entertaining multiple perspectives. Using these economic reasoning tools in more conservative school districts might also be a way that teachers could "objectively" talk about controversial issues as well as incorporate a more balanced mix of conservative and liberal perspectives. After all, "It depends" (i.e., it depends on one's perspective) is a common response heard from many economists when asked about economic issues and solutions, thereby in some ways, adding a legitimate and disciplinary-based economic instructional goal of discussing controversial issues from multiple perspectives beyond the economic perspective to which the teachers in this study felt restricted.

For example, rather than read paragraphs from the textbook on the unintended consequences of antipoverty policies because of its controversial nature, perhaps Ms. Miller could have used a cost-benefit analysis chart or the EWT principles to analyze the differing perspectives on such policies. This means students would have brainstormed the costs and benefits of antipoverty policies on U.S. citizens. Achieving such an

economic instructional goal would help explain and affirm the diversity present in Ms. Miller's classroom, and all classrooms, by giving voice to marginalized perspectives, in addition to achieving her instructional goal of forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters. Moreover, after using these economic reasoning tools to gain a deeper understanding of current events and issues, Ms. Miller's students might be in a better position to engage in a related authentic discussion. The instructional practice of leading classroom discussions should not only deepen students' understanding of economic content but also teach students how to engage in productive discussions.

As was demonstrated by all three teachers, in order for the economic reasoning tools to genuinely become life skills that empower students to make more informed and productive decisions as adult citizens, teachers should not only model how to use the tools but also provide ongoing learning opportunities for student to apply the tools to novel and real-world problem scenarios throughout the economic course. Ms. Levitt's instructional practices served as an effective way to repeatedly expose students to the EWT by gradually building from familiar contexts to less familiar contexts. After discussing each of the EWT principles, with many familiar examples and applications to her and the students' lives, Ms. Levitt instructed the students to use the EWT principles to analyze the commonly seen movie *Willy Wonka and the Chocolate Factory* from an economic perspective, creating a new and deeper understanding of the movie and economic decisions made by the characters. Soon after, Ms. Levitt required students to

explain less familiar current events using the EWT in addition to her weaving the EWT principles—sometimes only one at a time—into her instruction on a weekly basis.

In agreement with the teachers in this study, I believe that repeated and initially highly scaffolded learning opportunities to apply the economic reasoning tools, namely the EWT, is critically important because students need to wrestle with economic concepts and principles since thinking like an economist is unnatural for most students, similar to thinking like a historian (Wineburg, 1999). Moreover, Dewey (1922/1988) would argue that before students develop the habit of using economic reasoning tools to make better decisions as adults and citizens, they need repeated practice in doing so. In fact, hanging a poster of the EWT principles in the front of classrooms as a constant reminder of how to critically think about everyday economic events, similar to the way Ms. Williams hung posters of basic economic concepts, would be helpful. Teachers should also consistently use economic language such as *costs, benefits, opportunity cost*, and *scarcity* throughout the entire course when discussing both economic content and everyday life in order that the EWT becomes a natural part of students' thinking processes and language.

Incorporating Active Learning Instructional Practices: Knowledge of Content and Teaching

Demonstrating their knowledge of content and teaching, all three teachers regularly incorporated active learning strategies in their instructional practices, which is consistent with the economic education literature that recommends activity-based learning (Lopus, Morton, & Willis, 2003; Robinson & Davies, 1999; Rosales & Journell, 2012; Wentworth, 1987). That is, rather than passively transmit economic content to

students, these teachers incorporated varying degrees of constructivism which included "the active creation and modification of thoughts, ideas, and understandings as the result of experiences that occur within sociocultural contexts" (Doolittle & Hicks, 2003, p.77). In addition to adhering the NCSS' (2010) charge that quality instruction means *doing* social studies, I submit that this constructivist style of instruction where students are *doing* economics is important in terms of engaging students in otherwise seemingly impersonal economic content. Moreover, the teachers' regular use of active learning instructional practices also supports the literature that suggests economic teachers are more activity-oriented than other social studies teachers, in part due to the vast array of active learning resources available through local Centers for Economic Education and the CEE (Clark, Schug, & Harrison, 2009; Schug, Dieterle, & Clark, 2009).

Ironically, however, there has been no conclusive empirical evidence to suggest that student-centered, active learning instructional practices are more effective in terms of increased student achievement in economics than more traditional, teacher-directed instructional practices (Watts & Walstad, 2011). Several reasons might help explain this lack of empirical evidence based on the findings of this study. First, for economic learning activities to translate into economic content learning, the teachers utilized intentional debriefing sessions after the activities were completed in a way that directly made connections between what the students experienced, for example during a simulation, and the economic learning objectives of the activities. Otherwise, the teachers would have run the risk of students losing sight of the economic content because simply engaging in economic activity does not mean economic concepts are intuitively

understood. Case in point, half of the adults in the U.S. who do not understand basic economic concepts (Harris Interactive, 2005) participate in economic activities on a daily basis. Second, just because activities that involve kinesthetic and sociocultural learning, for example, are effective for some students, does not mean that all students learn the same way because of differences in learning styles and personalities. Third, standardized tests are often a mismatch for active learning instructional practices, thus perhaps misrepresenting the degree to which students learned the economic content.

In this study, the teachers' use of active learning instructional practices coincided with their personal orientations toward economics in terms of their general teaching philosophy of student-centered practices, which research suggests are sometimes more influential on instructional practices than professional development programs (Friedman, 2006). This research finding was particularly true for Ms. Miller, who described her teaching philosophy as a mix between teacher and student-centered practices, despite having attended countless hours of economic education professional development programs that promoted active learning economic lessons. Interestingly, Ms. Miller used lecture more often than the other two teachers, and her students also achieved the greatest average increase in TEL post-test scores. However, this study was not designed to establish causal relationships, thus the impact of Ms. Miller's teacher-centered instruction on her students' achievement in economics remains inconclusive.

I concur with the teachers' rationale for using hands-on, economic learning activities to interest students in learning economic content. For example, all three teachers used simulations to provide students with the virtual experiences and

perspectives of a producer, which most students had not gained simply as a function of age. These simulations appeared to engage students in ways that merely lecturing about the role of producers in a market economy would not have. However, constructivist and experiential instructional practices are often less effective when students lack relevant prior knowledge and teachers exert only minimal guidance for students' learning (Kirschner et al., 2006). This means that the way in which economic teachers utilize economic learning activities should vary from class to class, depending on unique students' needs. For example, in some instances, teachers may need to introduce economic concepts before the activity begins or, in other instances, after the activity ends. Additionally, just like teachers' use of technology should enhance students' learning outcomes in ways that could not be achieved without technology (Ayers, 2014; Mishra & Koehler, 2006), economic teachers should ensure that using active learning instructional practices actually achieves the same or improved learning outcomes as compared to more passive learning instructional practices.

Relating Economic Content to Students' Lives: Knowledge of Content and Students

Several of the factors that shaped the teachers' personal orientations toward economics were a variety of valuable life and professional experiences. All three teachers started teaching later in life after holding other jobs outside of the education field and starting a family. Perhaps this is why they followed economic current events more closely and developed a genuine belief that economics is an important life skill for all high school students. In other words, they had lived long enough as an independent adult to understand the multitude of real-life applications and benefits stemming from a basic

understanding of economics. Having such life experiences was particularly helpful in their economic classes, which heavily relied on current events and real-world examples to make economic content relevant to students' interests and lives.

When asked to share their meaning of highly effective economic teachers, all three teachers emphasized the need to constantly deliver instruction with a high degree of student relevance. More specifically, Ms. Levitt and Ms. Miller held similar beliefs about what economic teachers need to know and be able to do in order to help their students learn economic content. Perhaps most important, Ms. Levitt emphasized the need to make economic connections to students' lives:

> To be highly effective, you have to think outside of the box to teach this class. I think you have to make connections at all levels and of all kinds for kids. You have to make those connections for them as well as lead them to those connections so they see it.

Ms. Williams also thought student relevance was critical to becoming a highly effective economic teacher, and she had this to add:

> You need to be passionate about the product that you're producing. Are you really caring that these kids become successful in the economy? Do you care that they're going make good decisions? It is rewarding when these kids tell you their little stories or you see them make progress or they're talking about how they're affecting the world. If you teach long enough to see that, right?

These teachers' beliefs about the importance of student-relevant economic instruction is not only consistent with economic education literature (Miller & VanFossen, 2008;

Schug & Walstad, 1991) but also with what I observed them doing in the classroom more often than any other of the instructional practices that emerged from the findings.

Similar to their economic reasoning skills instruction, the teachers scaffolded their instruction by moving from economic explanations that were familiar to students to less familiar by using analogies, drawing pictures, and breaking down economic content into less complex "chunks" of information that were inside the students' zone of proximal development (Vygotsky, 1978). Real-world examples were habitually included for most, if not all, of the economic concepts and skills taught and often served as the focal point of the lesson rather than a mere afterthought, just as leading economic education scholars suggest (Miller & VanFossen, 2008; Schug & Walstad, 1991). Economic examples oftentimes related to the here-and-now of students' everyday lives and school-related experiences, such as when Ms. Levitt explained to students how the Ebola outbreak might affect the chocolate prices at a local chocolate shop and when Ms. Miller redirected a group of boys off-task behaviors by explaining the *opportunity cost* of wasting class time.

The teachers' demonstrations of knowledge of content and students were essentially exemplar examples of culturally relevant pedagogy and teaching practices (Banks et al., 2005; Gay, 1993; Ladson-Billings, 1995) by which they connected economic content to students' prior knowledge in a way that capitalized on the students' unique life experiences, sociocultural and socioeconomic influences, and out-of-school funds of knowledge (Moje et al., 2004; Vygotsky, 1978; Wilkinson & Son, 2011). For instance, all three teachers were intentional in using economic examples that were

sensitive to some of their students' socioeconomic struggles by suggesting they save money by attending community colleges and trade schools. The teachers also used economic examples that related to many of their students' rural recreational activities such as hunting and fishing. Ms. Miller even adapted a popular economic simulation about the *tragedy of the commons* and *incentives* to include cattle farming, a common occupation for her students' parents. In other words, in some ways these teachers implemented a "humanizing pedagogy that respects and uses the reality, history, and perspectives of students as an integral part of education practice" (Bartolome, 1994, p. 173). Such economic instructional practices grounded in culturally relevant pedagogy are critically important as student populations grow increasingly diverse (Park & Chen, 2012) and should serve as conventional instructional wisdom for all teachers (Ladson-Billings, 1995).

The uniqueness of each student's life experiences and prior knowledge base also required these economic teachers to understand what made economic concepts and skills easy or difficult for students to understand as well as common economic misconceptions, two important components of PCK (Shulman, 1986). From an early age, students develop their own personal theories about how the world works, sometimes based on misinformation (Gardner & Boix-Mansilla, 1994) and thereby serving as a stumbling block for correctly learning economic content (Baumann, 1996-1997). Based on my observations, it appeared that prior knowledge activation and repetition were the two most commonly used economic instructional practices by the teachers to identify and remedy student misconceptions. For example, Ms. Williams started a lesson on *fiscal*

policy by having students answer a few questions about what they already knew about entitlement spending, and Ms. Levitt constantly repeated the fact that economic systems were different from government systems, a misconception she said her students commonly held, over the course of a weeklong lesson on comparative *economic systems*.

Finally, based on their economic content knowledge and knowledge of their students, all three teachers believed that the economic course should be divided into two economic courses—one basic and one advanced—similar to the way other classes are divided into regular and AP. This preference was consistent with the teachers' personal orientation toward economics in terms of course beliefs and instructional goals. According to the teachers and my own personal opinions, the basic economic course should focus more on economic skills that are important for life as an adult and citizen, while the advanced economic course should be more theoretical in nature in preparation for taking a college level economic course. This dichotomy would also allow teachers to spend more time on economic skills applications in the basic economic course and less time on more complex economic content. The teachers agreed that the basic economic course should continue to be combined with the personal finance course in a yearlong format to satisfy the state's graduation requirements. Students could then elect to take the advanced economic course, which should be a semester course not officially combined with personal finance, for a more in-depth study of economics, which often prepares students for a college level economic course (Watts, 2005).

The proposed basic economic course would allow the teachers more instructional time to achieve what they said were the most important things students should have

learned after completing their economic course: the personal impact of economics, citizenship preparation, and productive decision making skills. In many ways, the purpose of such a basic economic course concurs with what other economic educators believe should be the focus of an economic course—that is, a focus on the practical side of economics (Buckles, 1987; Highsmith, 1990; VanFossen, 2000). The basic economic course might also have an added benefit of changing negative student attitudes toward economics (Clark and Davis, 1992; Vredeveld and Joeng, 1990), increasing the odds that they will be more inclined to take another economic course in the future and take an interest in news about the economy.

Impact of Instruction on Students' Economic Attitudes and Knowledge

One of the goals of this exploratory, qualitative study was to understand the PCK of three award-winning economic teachers as demonstrated by their instructional practices in an economic course. In addition to the awards the teachers won for their economic instructional practices, these teachers were effective in the sense that they used many of the recommended instructional practices found in the economic education and social studies literature. Moreover, based on my observations, ten years as a director of economic education professional development, and former high school teacher, I also believe that these teachers were effective in teaching economics. Even Ms. Miller's more teacher-centered instructional practices could not be deemed as less effective in light of the fact that no one instructional practice has been proven to be more effective when teaching economics to date (Watts & Walstad, 2011). In addition, Ms. Miller, who used more lecture than the other two teachers, had the highest post-test scores. Also important

to note, a few students in Ms. Levitt's class suggested that she use *more* direct instruction.

The intention, then, for giving a pre/post-test and pre/post-survey was to obtain data for contextual purposes only. Nonetheless, the relatively modest increases in the teachers' average test scores and survey responses were at first glance somewhat perplexing based on my and other educators' designation that these teachers were highly effective in the classroom. Yet, upon further analysis and asking the teachers for their interpretations of the data, several important conclusions were drawn.

Perhaps the most compelling argument for the lower than expected test score gains is the nature of the testing instrument. The TEL is designed to assess the economic knowledge of all high school students in all types of economic courses, irrespective of the differences in students' ability levels and the teachers' instructional goals of either basic life skills learning or more technical and theoretical learning. The primary instructional goal of the teachers in this study was to develop basic economic life skills in their students, which in some ways, is a mismatch for the type of knowledge the TEL is designed to assess since concept-based instruction often leads to higher scores on concept-based tests such as the TEL (Miller & VanFossen, 2008). Perhaps this explains, in part, why Ms. Miller's lecture-based instructional practices generated higher post-test scores. The teachers and I also agreed that the advanced language and higher level thinking that the test questions required were a poor fit for their classes because the teachers geared their instruction somewhere in the middle of the mix of student ability and achievement levels present in each class, erring on the lower sides of the continuums.

Perhaps the historically low test scores reported for both integrated and standalone economic courses (Clark & Davis, 1992; Walstad & Rebeck, 2001) are also explained, at least partially, by similar disparities between students' ability levels, teachers' instructional goals, and the nature of the TEL instrument. Therefore, I submit that a skills-based authentic assessment would have been a more accurate measurement of what the students learned during the first semester.

Another factor that may have skewed the post-test gains was the fact that the students took the pre-test during the second week of school after the teachers had already partially covered basic economic concepts, which were threaded throughout many of the TEL questions, explicitly and implicitly. In other words, the pre-test scores may have been artificially high, thus reducing the post-test gains. Also noteworthy were the uncontrollable factors that influence any standardized test results, including several of the students in each class who I observed not taking the test seriously and just randomly bubbling in the answer sheet within minutes. Additionally, as noted in the TEL Examiner's Manual (CEE, 2013), the test scores should be carefully considered in light of the following influences on the degree of test difficulty: "classroom emphasis on the specific point in the question, the closeness or plausibility of the incorrect alternatives, or distractors, and how the item content relates to students' outside activities, experiences, reading, and awareness…" (p. 11). However, one factor that the teachers in this study did have control over was the consistent use of economic terms, which Ms. Williams achieved with varying levels of success. A commendable instructional goal in many ways, Ms. Williams was oftentimes most concerned with students understanding the

basic, real-world ideas behind the economic terms and would sometimes purposefully choose to not mention the technical terms to not confuse students or weight them down with difficult vocabulary. However, such instructional practices void of proper economic terminology likely does not translate well into high scores on tests that are grounded in technical economic language. I would suggest that all teachers, therefore, anchor their real-world lessons in technical economic terminology, not only for test taking purposes, but more importantly, so that they will be able to understand the daily news and vote for political candidates who do use technical economic language.

With regard to the post-survey responses, the most surprising findings were several of Ms. Miller and Ms. Williams' students saying that they did not enjoy anything in particular about their economic class and, in all three classes, the relatively unchanged student attitudes toward economics being interesting and important. Despite what I and the teachers thought was highly personalized economic instruction, not all students agreed. One plausible explanation for this incongruent finding might revolve around the fact that the economic courses in this study were largely aimed at preparing students for their *future* roles as adult citizens, therefore simply as a function of the students' ages, they found the economic course to have less of an impact on their present lives. This speculation corroborates with the shortsighted post-survey responses to the question about how students thought they would use their newfound economic knowledge and skills in the future, to which most students gave personal money-related answers.

Implications for Classroom Instruction and Teacher Education

Teaching a Basic Economic Course Versus an Advanced Economic Course

In addition to adopting many of economic instructional practices demonstrated by the teachers in this study, I recommend offering two separate economic courses—a basic economic course and an advanced economic course. Despite the debates that continue around concept-based versus skills-based economic instruction (Miller & VanFossen, 2008; Schug & Walstad, 1991), the teachers and I agreed that the purpose of economic courses required to be taken by *all* high school students should focus on teaching economics as a life skill rather than academic preparation. This type of skills-based instruction should transcend students' ability levels and academic goals in order to prepare all students for career and civic life. If possible, a separate more advanced course (e.g., AP Economics) should also be available for students who voluntarily choose to study economics in a more theoretical way, based on their personal interests or higher education aspirations. Because a life skills focus requires more time to practice economic skills and include more real-world, personalized examples, a trade-off will have to be made by reducing the breadth and depth of economic content coverage. This is especially true if teachers provide students with frequent opportunities to practice applying economic reasoning skills, which is advised by leading economic education and social studies scholars (Buckles, 1987; Schug & Western, 1990; Wentworth, 1987; Wentworth & Western, 1990).

In particular, I would recommend that teachers incorporate EWT instructional practices on a regular basis throughout an entire basic economic course, affording

multiple learning benefits. A form of procedural knowledge, the EWT has been shown to be the major difference between novice high school students and expert economists (Miller & VanFossen, 1994; VanFossen, 1995; VanSickle, 1992). While this is not to suggest that high school students should develop the same level of expertise as economists, it does speak to the need to teach students the basic processes by which economists analyze and suggest solutions for personal and societal economic problems. That is, teaching students to "do" economics using the EWT positions them to analyze and better understand everyday economic problems encountered in their personal lives, the daily news, and politicians' platforms without having to learn complex economic content (Wentworth, 1987). This type of economic reasoning instruction might even help increase students' interest in economics and reverse the negative attitudes students typically have toward economics (Wentworth & Western, 1990). In addition, using the EWT on a consistent basis contributes to developing an accurate disciplinary understanding of economics, which facilitates the application of the EWT to other social studies and core subjects.

As was concluded in this study, the disciplinary background of the teachers did not significantly impact their economic instructional practices. Therefore, based on these context-specific findings, I would equally recommend either a CTE business teacher or social studies teacher for a basic economic course that emphasizes life skills instruction. However, more generally speaking, if given the choice that many school districts must make, I am inclined to think for a variety of reasons that CTE business teachers, whose

mission is workplace readiness, are the better choice for a basic economic course while social studies teachers are the better choice for a more advanced economic course.

From a social studies perspective, some lower achieving students might not have the same amount of prior knowledge in history and geography, for example, assuming their lower grades and standardized test scores are an accurate measure of what they know. Therefore, economic connections made to these subjects by social studies teachers, who typically have related disciplinary backgrounds, may not be as effective in activating prior knowledge for the sake of relating new economic content, further increasing the learning gap and disadvantaged footing after graduation. In addition, one could argue that if a basic economic course is designed to prepare students for the real-world and citizenship, daily news stories and politicians' platforms are related more often to business than history and geography. By the same token, social studies teachers are likely the better choice for an advanced economic course designed for college-bound students because a social studies interdisciplinary approach to teaching economics would reinforce other social studies content that the students are likely to reencounter during their first two years of fulfilling liberal arts requirements at a college or university.

For the most part, the teachers supported this dichotomy of which teachers should teach the two economic courses. From Ms. Levitt's perspective, "CTE teachers are geared toward the practical, hands-on and life skills courses where the social sciences are more geared toward the academics, the higher level and critical thinking [skills]." Similarly, Ms. Williams thought social studies teachers had more experience delivering theoretical instruction to prepare their students for college courses and AP exams. More

specifically, according to Ms. Williams, if teachers "cannot just reel off how an event can relate back to your personal economic situation, then I don't think [they're] qualified to teach it." Ms. Miller, on the other hand, stated her reasons for believing CTE teachers were more qualified to teach the economic course, regardless of whether it was a basic or advanced course, simply because economics is vastly interconnected with the business world. Moreover, because the state required economic content to be integrated in all K-8 social studies subjects, Ms. Miller believed that students had been exposed to the social studies perspective of economics for most of their schooling, so giving them another perspective—that is, a business perspective—would benefit the students.

However, regardless of who teaches the basic and advanced economic courses, I would recommend teachers form a professional learning community for multidisciplinary and interdisciplinary planning purposes to develop the horizon content knowledge as well as the other types of PCK discussed in this study. PLC meetings are especially important for economic teachers with limited common content knowledge and PCK in economics as well as new teachers who lack experience in teaching economics and an intellectual disposition to keep up with current events.

Integrating More Assignments in Social Studies Methods Courses That Develop PCK in Economics

While effective PCK in economics and other subjects is often dependent on teaching experience (Friedrichsen, Van Driel, & Abell, 2011; Hanuscin, Lee, & Akerson, 2010), teacher education and professional development programs play an important role in shaping preservice and inservice teachers' PCK. The sooner teachers learn effective

PCK, the less trial-and-error instructional practices will negatively impact student learning in the meantime (Grossman, 1990). Therefore, what follows are suggestions based on the findings of this study, all of which I have implemented as a teacher educator, for how teacher education programs might better develop preservice and inservice teachers' PCK in economics as defined by horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students, while also shaping their personal orientations toward economics. The benefit of incorporating one or more of these teacher education suggestions will hopefully be the jumpstart teachers will have on using the instructional practices described in this study to increase students' learning in economics and students' preparation for adulthood and citizenship. This is especially important for social studies teacher education programs, which have historically delimited economic education instruction to one class period, at best (Salemi, Saunders, & Walstad, 1996), in social studies methods courses. Classroom teachers and professional development trainers should also consider utilizing these assignments when feasible.

Developing teachers' horizon content knowledge is not optional in light of the new *College, Career, and Civic Life (C3) Framework* (NCSS, 2013) and the Common Core State Standards initiative. Moreover, economic education literature, albeit limited, reports that interdisciplinary instruction is mostly ineffective when noneconomic teachers incorporate economic content into other social studies subjects such as history and geography, thus the greatest gains in economic learning are achieved in a semester economic course (Buckle & Watts, 1998; Miller & VanFossen, 2008; Schug & Walstad,

1991). However, the gains in economic learning when multi/interdisciplinary instruction is incorporated into economic courses by economic teachers remain inconclusive. Nevertheless, multi/interdisciplinary instruction is unavoidable in an economic course for which the content inherently depends on other subjects such as math and history, meaning efforts to prepare preservice teachers to deliver economic multi/interdisciplinary instruction is still warranted.

Specifically, the *College, Career, and Civic Life (C3) Framework* advocates for social studies instruction that implements an interdisciplinary inquiry approach to best prepare students for their roles as college students, employees, and citizens. Similarly, the recent adoption of the Common Core State Standards by most states requires a multidisciplinary approach that incorporates English and mathematic instruction. In addition to teacher educators modeling multi/interdisciplinary economic lessons, I recommend three assignments to develop teachers' horizon content knowledge in preparation for teaching economics and other social studies subjects. However, based on the findings from this study, teacher educators should explain to students that multi/interdisciplinary instruction should be used less often in a basic economic course to avoid overcomplicating and convoluting a content area that is already difficult for many students. That is, students who lack a firm foundation of prior knowledge in other subjects may not benefit from *frequent* curriculum connections, thus horizon content knowledge serves as a hindrance to understanding economic content. Moreover, delaying economic content coverage to reteach content students should have learned in

other classes will require careful consideration on a class-by-class basis according to the students' needs.

The objective of the first two recommended assignments is to explicitly make economic curriculum connections to other subjects, which is what I observed all three teachers doing on a regular basis as a result of their content knowledge of other subjects. This might be accomplished by teacher educators requiring students to analyze the learning standards for economics and other subjects in order to compile a crosswalk that illustrates how economic content might reinforce and extend content in other subjects and vice versa. A similar crosswalk representing how economic concepts and skills learned in the first part of an economic course (e.g., *opportunity cost*) might be used to establish prior economic knowledge that will be used to learn economic content later in the course (e.g., *comparative advantage*). This exercise of pinning down opportunities to foreshadow economic content would be useful in developing students' horizon content knowledge *within* the economic course, which the teachers in this study frequently demonstrated, especially for inexperienced teachers who might be less familiar with the interrelated nature of economic content.

Another instructive assignment intended to develop the kind of horizon content knowledge demonstrated by the teachers in this study would require students to write and demonstrate a multi/interdisciplinary economic lesson, preferably one that also integrates active learning strategies, in collaboration with other students with different disciplinary backgrounds. This experience would benefit the class as a whole by being exposed to and critiquing examples of multi/disciplinary instructional practices. Videotaping the

lesson demonstrations would aid a follow-up assignment that requires students to reflect on the rewards and challenges in collaboratively writing and delivering multi/interdisciplinary economic lessons. A third assignment might be completed during the students' field experiences in which they investigate the prior knowledge of secondary students to better understand what students know and do not know, including their misconceptions, about economics. This is important for preservice teachers because they lack the instructional experiences held by the teachers in this study, which is often required in understanding how students struggle to learn economics. This investigation of prior knowledge has also been shown to have a positive impact on PCK development in preservice teachers (Barton, McCully, & Marks, 2004; Seixas, 1994).

The findings of this study also have implications for how teacher educators might go about developing teachers' specialized content knowledge in a way that contributes to developing citizenship and economic reasoning skills in high school students. The first assignment that I recommend, similar to the instructional practices utilized by the teachers in this study, would require students to regularly analyze current events on a local, state, national, and global level, by describing how each of the EWT principles relate to and help explain the current events. This economic analysis of current events should first be modeled by teacher educators multiple times, because the EWT is oftentimes as unnatural for students to learn as historical thinking (Ayers, in press). Moreover, the EWT does not intuitively evolve as students learn economic concepts and principles (Wineburg, 1999; Wentworth, 1997), as was observed in this study. The economic analysis portion of the assignment could also be supplemented with questions

about the current event that further develop other aspects of PCK in economics including the following:

- What economic curriculum connections can be made to other multi/interdisciplinary subjects?
- What is your personal position on the issue as a citizen, and what do you recommend as possible courses of action and policy reform alternatives?
- What multiple perspectives exist, and what comprise might need to take place?
- How is this economic event relevant to your personal life? To the lives of your future high school students?
- What published economic lessons would be useful in teaching high school students about the economic content featured in this news article?

This assignment not only develops specialized content knowledge by combining citizenship preparation and economic reasoning, but also helps develop preservice teachers' intellectual disposition and habits of staying abreast of current events, which research suggests is lacking in most preservice teachers (Journell, 2013).

Despite uncommonly practiced by the teachers in this study, teacher educators should also consider modeling how to conduct authentic discussions about economic topics, including ones about controversial issues. Afterwards, students could write and demonstrate a similar lesson that incorporates economic reasoning tools such as using the cost-benefit analysis chart to methodically unpack and discuss the costs and benefits of public healthcare and immigration reform, for example, from both economic and

noneconomic perspectives to draw truly informed conclusions. Or, as was the case with Ms. Williams, using the PACED decision making model to analyze which entitlement spending criteria are most fair in determining which citizens receive it. The students' lesson plans should include background knowledge on the economic topic or issue from multiple perspectives, questions that challenge students' assumptions to invite opposing viewpoints, speculations about the types of related prior knowledge and misconceptions held by high school students, anticipated student questions and arguments, and social justice teachable moments. Providing preservice teachers with the opportunity to practice facilitating authentic discussions about noncontroversial and controversial issues in methods courses should be prioritized in light of the research that suggests such instructional practices are lacking in most U.S. classrooms (Bickmore & Parker, 2014).

Teacher educators should also consider developing students' specialized content knowledge by demonstrating, then creating assignments on, how to use economic reasoning tools to better understand other subjects, such as using the EWT to solve economic mysteries in U.S. history (Buckles, 1987; Laney, 1991; Susskind, 1997) or, as Ms. Williams' demonstrated, to understand environmental issues. Teaching preservice teachers and high school students to use economic reasoning tools with real-world problem scenarios and hypothetical ones is equally effectiveness in strengthening their abilities to understand the world around them and hopefully make better decisions consequently (Laney, 1991). These types of assignments are particularly useful based on literature that suggests students of all ability levels can learn economic reasoning skills (Morton, 1987).

To assist in developing knowledge of content and teaching based on the findings of this study, I advise teacher educators to model and instruct preservice teachers on how to utilize active learning strategies when teaching economics. Despite the research that suggests active learning strategies are not necessarily more effective than passive learning strategies, most economic educators would agree, including the teachers in this study, that hands-on learning is important for students to take an interest in economics and for motivation to learn about economics in high school or later in life by completing further economic coursework in college, perhaps even in pursuit of a career in economics (Becker, Greene, & Rosen, 1990; Watts & Walstad, 2011). Used by the teachers in this study, the lesson plans and curriculum units published both online and in print by the CEE are excellent resources for teacher educators in finding active learning economic lessons to demonstrate and in equipping preservice teachers with a wealth of curriculum materials for student-teaching and beyond.

Finally, teacher educators should include a variety of learning activities in their methods courses that directly build preservice teachers' knowledge of content and students in a way that facilitates highly personalized economic instruction like the teachers in this study consistently demonstrated. This means that, in addition to identifying explicit economic curriculum connections across grades/subjects and within an economic course, teacher educators should also scaffold preservice teachers' ability to make explicit economic content connections to high school students' lives. This practical application of economic content is sometimes difficult for even veteran teachers but especially for traditionally aged college students because they lack ample life experiences

from which to draw. However, this discrepancy in real-world knowledge and experiences is all the more reason to make sure methods courses emphasize the culturally relevant connections between economic content and everyday life.

One way this can be accomplished is by integrating a "Student Relevance Journal" that requires students to list economic concepts and skills on the left side of a T-chart and corresponding examples of direct ways students' lives are influenced on the right side. For example, *contractionary monetary policy* might be listed on the left side of the chart and "increased car payments due to increased interest rates on car loans" might be listed on the right side of the chart. Or, *opportunity cost* and "hanging out with friends instead of studying might cost high school students the opportunity to earn a good grade on a test." Teacher educators should use caution in making sure that such monetary and nonmonetary examples are listed, despite the natural tendency to relate everything back to personal finance examples. This assignment not only requires students to critically think about the economic content but also equips students with plenty of student-relevant examples of economic content that is required for increased student achievement in economics (Schug & Walstad, 1991).

In similar ways, preservice teachers lack experience teaching economics, which all three teachers in this study attributed to their success; therefore, they do not have the benefit of knowing which economic concepts and skills are typically difficult for high school students to learn and what common economic misconceptions exist, two important components of PCK (Ball et al., 2008; Baumann, 1996-1997; Schug & Baumann, 1991; Shulman, 1986). A good place for teacher educators to start is by instructing preservice

students to read the research studies conducted by Baumann (1996-1997) and Schug and Baumann (1991) that identify common economic misconceptions and recommend instructional practices to correct the misconceptions. Following the readings, students could create a research-based "Tip Sheet" that summarizes the misconceptions and instructional practices for future use when teaching economics.

Offering an Economic Methods Course

All three teachers in this study attributed much of their success as an economic teacher to the extensive professional development training in economic education that they voluntarily attended because the economic content knowledge and general pedagogical knowledge they received during their teacher education programs were not sufficient. These claims support the basic premise of PCK. That is, although these teachers had completed multiple courses in economics at the undergraduate and graduate level, they still did not fully understand "ways of representing and formulating the subject that make it comprehensible to others" (Shulman, 1986, p. 9). Even Ms. Williams who had earned a master's degree in business, inherently grounded in economics, did not feel adequately prepared to teach economics at the high school level.

When asked how to best prepare secondary teachers to teach a semester course in economics, without hesitation, all three teachers thought specialized coursework and training in instructional practices uniquely geared toward economics knowledge and skills were most important. Referring to someone with a bachelor's degree in economics, Ms. Miller said,

> You can be the smartest person in the world, but you're not going to be able to relate that to your students, especially something as complex as economics. You have to remember, these aren't college students. They're not going to get all the charts and graphs and the formulas right away. You need just concrete knowledge, ground level knowledge, and [teachers] would need to be able to get that across [to students].

Ms. Miller went on to say, "I think you would be better off having an education background with a minor in economics and then just continue your economic education from that point than if you had a major in economics with a minor in education."

In the same way, Ms. Levitt purported that a teacher with strictly a bachelor's degree in a social science, including economics, would "have to be committed to taking more classes that help them specialize at another level and help them go deeper with content, so they have a better understanding of what they're teaching." According to Ms. Levitt, these classes might include graduate courses and professional development programs like the ones offered by the local Center for Economic Education. Ms. Levitt's belief that proper teacher preparation in economic education demanded that teachers learn both economics instructional practices along with economics content because,

> I think that you can't come into this class and teach it like you would some other classes because you have to be able to [make it] relevant to the students. They have to see the connections that they have [to economics], and you can't just let them come in and read a book and take notes. It's not going to mean anything to them, and it's not going to make sense…I think you have to have some training on how best to teach economics for it to be a relevant class.

Like Ms. Levitt and Ms. Miller, Ms. Williams did not believe that teachers would be prepared to teach a high school economics course by only learning economics content

from an economics professor without related instructional practices. In fact, she admitted,

> Well, I had an MBA when I started teaching this course, which meant I had master's levels of economics classes, but I really don't think I was prepared at that point even though my license covered it. I truly think the material needs to be taught by somebody who is passionate about business or about what's going on in the world.

Furthermore, Ms. Williams thought that teacher education courses in economic education "need to go back to what you're supposed to be teaching" as determined by state standards rather than extraneous, upper level economic theory. Teachers "need to have some specialized classes to get them back to what the material is that the state is looking for you to impart to the students." To do otherwise, according to Ms. Williams, would be an "injustice" to the high school economic course and the students. In fact, Ms. Williams felt strongly about requiring all high school economic teachers to attend a three-credit professional development course offered by the local Center for Economic Education before teaching the course, which is essentially a content-specific methods course in economics. After asking if it was okay to "get on her soapbox," Ms. Williams concluded by saying,

> The whole reason [the economics course] was mandated was because there's a deficit in people graduating from high school and knowing this material. But then you can't just let anybody teach it because if you do, you're really not accomplishing the purpose [of mandating the course]. So you've got people who are passionate about teaching it, and you've got somebody who just has an endorsement that covers it and you're really still doing the students a disservice.

Therefore, in order to separate the content expert from the pedagogue, one of Shulman's original PCK arguments, I ideally recommend that teacher educators offer an economic methods course that includes the PCK assignments discussed in the previous section as well as coverage of basic microeconomic, macroeconomic, and international economic content, similar to the professional development programs these teachers attended (Ayers, in press).

This refinement to teacher education programs is a practical solution in improving the effectiveness of economic teachers when considering the research that suggests teachers typically only take one economic course for licensure despite teachers needing four to six economic courses to significantly impact student achievement on standardized tests (Allgood & Walstad, 1999; Dumas, Evans, & Weible, 1997; Lynch, 1990). This is especially important for already overcrowded teacher education programs. In my opinion, the documentation of economic teacher unpreparedness (Dumas, Evans, and Weible, 1997; Eisenhauer & Zaporowski, 1994) can be most efficiently addressed by preservice and inservice teachers completing an economic methods course similar to the one described, especially given the advisement of education scholars who suggest teacher education programs should offer multiple content-specific methods courses in order to develop highly qualified teachers (Bransford, Darling-Hammond, & LePage, 2005; Cohen & Hill, 2001).

However, based on the various disciplinary backgrounds of teacher educators, offering an economic methods course might require team-teaching the course with an economic professor, who teaches the bulk of the economic content while the teacher

educator focuses on teaching PCK in economics through lesson demonstrations and assignments. Crossing this "disciplinary divide" between education professors and social science professors has not only proved to be effective in my own experiences but also in the experiences of other teacher educators (Cude, Jaffee, Dillard, Sandman, & Husley, 2014). This collegial collaboration to develop PCK should also prove fruitful in light of the *College, Career, and Civic Life (C3) Framework* that emphasizes an interdisciplinary approach to social studies instruction.

Summary of Discussion

In summary, I believe that for secondary economic teachers to be effective, they must have sufficient PCK in economics in the form of horizon content knowledge, specialized content knowledge, knowledge of content and teaching, and knowledge of content and students. Guided by the findings of this study, I argue that the demonstration of these PCK components should include instructional practices that use economic content to make curriculum connections to other grades/subjects, as well as within an economic course; to prepare students for citizenship; and, to develop economic reasoning skills. Grounded in activity-based learning opportunities, these instructional practices should be characterized as highly relevant to students' lives and prior knowledge, including misconceptions.

In addition, effective economic teachers should have personal orientations toward economics that capitalize on previous life and teaching experiences related to economics, are informed by proper disciplinary backgrounds in either business or social studies, and do not negatively impact students' understanding of both conservative and liberal

economic perspectives due to personal political leanings. Further, I submit that effective economic instructional practices are guided by teachers' beliefs that a basic economic course should emphasize economic reasoning skills that are important in developing democratic citizens who have the proper economic knowledge and skills needed to productively contribute to society and lead meaningful lives. However, for this type of economic instruction to become a reality, economic teachers should find ways to engage students in more authentic discussions about noncontroversial and controversial issues, albeit not an easy task in conservative school districts. Moreover, teacher educators must play an active role in developing teachers' PCK in economics and shaping teachers' personal orientations toward economics. It is my hope that this study will serve as a building block for future economic education research studies, which I will discuss in the next section, along with the limitations of this study.

Limitations of the Study and Recommendations for Future Research

The restricted extent to which the findings of this exploratory study can be generalized is a natural limitation of qualitative case study, especially with a small sample size of three teachers. Additionally, it is important to note that this study did not generate any conclusive quantitative evidence to triangulate the effectiveness of the teachers' instructional practices apart from the TEL, which was determined to be an invalid assessment instrument for a basic economic course. Moreover, I chose to use the quantitative data gathered from the pre/post-surveys completed by the students to provide context for the study's findings rather than to measure the effectiveness of teachers' instructional practices. However, I believe the five instructional practices for teaching a

basic economic course that emerged from the data collected on the three teachers' personal orientations toward economics and the demonstrations of the various types of PCK in economics offer a baseline of important teacher knowledge and skills, especially since many aspects of the instructional practices are supported by the economic education literature. Nevertheless, to strengthen the reliability of these findings, I recommend that similar qualitative case study endeavors replicate this study in a way that also richly describes and gives meaning to the complex and nuanced nature of effective economic instructional practices.

Also questionable is the degree to which similar findings about effective economic instructional practices would have been discovered in an urban school setting with a more diverse student population, thus adding more insight into the instructional practices and implications discussed in this study. Therefore, another recommendation for future research would be to conduct a similar study in urban schools with more liberal political leanings using a theoretical framework that combined PCK and culturally relevant pedagogy. This type of study is of particular interest considering the economic education literature that suggests economic courses have the potential to empower at-risk, often marginalized, minority students (Elder, 1991; Grimes, 1995).

Another limitation of this study was the possible heightened researcher reactivity of the teachers because of my former role as the director of the local Center for Economic Education that offers professional development programs promoting active learning, interdisciplinary economic instructional practices, which the teachers attended. Consequently, teachers may have been tempted to distort their normal instructional

practices and interview responses accordingly, thus hindering the findings and implications of this study. Replicating this study by a researcher with less personal biases toward what effective economic instruction might look like in high school classrooms would enhance research outcomes used to define instructional practices in secondary economics.

In addition, despite the preponderance of quantitative research studies in economic education, I recommend conducting a study that measures the impact of teachers' PCK on student achievement in economics similar to studies conducted in mathematics by Ball and her colleagues. Perhaps a mixed methods study would best capture not only the quantitative data necessary but also the meaning of the standardized test scores in the unique context of the classrooms under study. Finally, in the interest of understanding the impact economic courses have on students' lives after they graduate from high school, a longitudinal study would be informative in understanding how students use their newfound economic knowledge and skills to carry out their adult and citizenship responsibilities.

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APPENDIX A

OBSERVATION PROTOCOL

Teacher Name (Date)

Pedagogical Content Knowledge

- Substantive (concepts, principles, facts) and syntactic (economic reasoning models)
    - Topic-specific vs. subject-specific instructional practices
- Domains
    - Horizon content knowledge
        - Student prior knowledge
        - Curricular knowledge (lateral, vertical) across grades and subjects
        - Curricular knowledge within subject
    - Specialized content knowledge
        - Citizenship preparation
        - Economic reasoning
    - Knowledge of content and teaching
    - Knowledge of content and students
        - Student experiences and interests related to economics
        - Student content misconceptions
            - Type (substantive or syntactic)
            - Corrective instructional practices
- Teacher orientations toward economics
    - Valuable experiences
    - Disciplinary background
    - Political leanings
    - Course beliefs
    - Instructional goals
- Components of good pedagogy as they pertain to economic instruction
    - Thoughtfully adaptive, 5 authentic instructional practices, discussions, controversial issues, culturally relevant teaching, and high-level tasks
- Shulman (1987) PCK definition : "the most useful forms of representation of those ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations" (p. 9)
    - Economic examples, connections to student lives and interests, and real-world issues

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Reminder of Daily Tasks:

Record the following items: student attendance, seating chart changes, parental consent forms collected, surveys completed, lesson objectives, sequence of activities with timeframes, list of artifacts collected, observations of student engagement, nonverbal communication, initial researcher interpretation in italic font, questions for mid- and post-interviews, week's lesson plan agenda, and administrative "to do" list

APPENDIX B

PRE-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed for my dissertation study. The purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. This pre-interview is grouped into four main categories: background information, content knowledge in economics, personal orientation toward economics, and economic-specific instructional practices. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. Your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Background Information

1. See completed teacher questionnaire to formulate any necessary follow-up questions.
2. Why did you become a teacher?
3. What are your future career aspirations, whether in the teaching profession or otherwise?
4. What is your general teaching philosophy?
   Prompt: What does a teacher need to know and be able to do to help students learn?
5. What is your general instructional style?
   Prompt: What types of instructional practices do you most often use?
   Prompt: Do you tend to be teacher-centered or student-centered?

Content Knowledge in Economics

6. Based on your questionnaire response, you indicated that you feel like you [*do or do not – check completed questionnaire*] have enough personal content knowledge in economics to teach a semester economic course at the high school level? Why?
7. From where have you gained most of this content knowledge in economics?
   Prompt: Give examples if needed: university coursework, professional development, self-initiative, news media, etc.

8. What are the most important economic concepts and skills students should learn? Why?
   Prompt: Provide examples of skills if necessary, such as "decision making" or "cost-benefit analysis."
   a) In what settings or adult roles might students need to use these economic concepts and skills? (e.g., consumer, producer, worker, voter, saver/investor, etc.)
9. What economic concepts and skills do you spend the most time teaching? Why?
   a) Which do you emphasize more, economic concepts (e.g., supply, demand, and inflation) or economic skills (e.g., decision making and understanding current events)?
10. What are common student misconceptions of economic concepts and skills?
    a) How do you correct each misconception?
    Prompt: What are content examples and related instructional practices?
11. What do you think is needed to prepare teachers to teach a semester course in economics?
    a) Do you think a degree in economics is sufficient? Explain.
    b) What types of specialized "teacher knowledge" do teachers need?
12. What are your thoughts on Virginia's integration of economics into all K-12 grades, as per the SOL?
    Prompt: Is it important for students to learn about economics at an early age? Why?
    a) How, if at all, do you try to connect economics to what students have learned in previous grades?
13. How, if at all, do you try to connect economics to what students have learned in other subjects?
    Prompt: What other subjects and economic content do you integrate?

Personal Orientations Toward Economics

14. Has X school district always used the year-long format to integrate the economic semester course with the personal finance semester course or has economics also been taught as a separate semester course?
    a) What is your preference regarding a separate vs. integrated approach to the economic semester course? Why?
15. Has there always been an online component to the economic/personal finance year-long course?
    a) Please explain the online component.
    b) What is the percentage of class time for the online component vs. face-to-face?
    c) How many years has the online component been required? Was it ever optional?
    d) What is your opinion of the online component?

16. Which teachers have been assigned to teach the economic course in this school? In this district?
    Prompt: Have social studies, CTE, and math teachers also taught it?
    a) Do you think this is the best choice of teachers?
    b) What, if any, is the difference between how CTE teachers approach the course and content as opposed to Social Studies teachers?
17. What type of district-level testing has been implemented for the economic/personal finance course? School-level?
    a) Does the test include economic content or just personal finance?
    b) What types of scores have your students achieved?
    c) Would you mind sharing your official scores with me for the last 2-3 years?
18. Do you think all high school students should be required to take a whole semester of economics? Why?
    Prompt: What is your rationale for teaching the course?
    Prompt: What do you consider to be the benefits of taking a semester of economics in high school?
19. Card Sort (Highsmith, 1990; Schug, Dieterle, & Clark, 2009)

[*Each of the 4 goals will be written on index cards. Place cards face down while reading directions*]

Place each of the following four goals for teaching economics in order of importance and discuss the rationale behind your rankings. One or more goals may receive the same ranking. For example, you many have two goals that rank as the most important reasons for teaching economics. If you have different goals not included on the index cards, please write the goals on blank index cards and rank accordingly.

    a) Forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters.
    b) Developing an understanding of basic economic concepts, principles, and the American economy.
    c) Teaching students about alternative economic systems around the world.
    d) Helping students understand current events and issues in economics.
    e) Other
    f) Other
    g) Other
    h) Other
20. Are students who complete a semester of economics better prepared for adulthood and citizenship after they graduate? Why?
    Prompt: What are specific examples, such as better understanding the evening news?
21. What economic instructional practices, if any, do you use that directly prepare students for adulthood and citizenship?
    Prompt: For example, town hall meeting debates and current events analyses.
22. Do students appear to find value in the economic course? How can you tell?

Prompt: How have students expressed positive and negative attitudes toward the course or content?

23. What is your opinion of the Economic and Personal Finance (EPF) state standards?
    a) Are they comprehensive in terms of micro, macro and international economic content?
    b) Is there a sufficient mix of concept-based and skill-based economic content?
24. Are you required to follow the state economic standards or are there district-level standards you follow? Explain.
25. What is your sense of the district and school's expectations and support of the economic course?

    Prompt: Do they see value in the course or is it just another graduation requirement?

Economic-Specific Instructional Practices

26. What in your background has prepared you the most for teaching economics at the high school level?
27. How did you personally prepare to teach this course for the first time?
28. What is your instructional style when teaching economics?

    Prompt: What types of instructional practices do you most often use?

    Prompt: Do you tend to be teacher-centered or student-centered?
29. How would you describe your typical approach to planning a unit in economics?

    Prompt: How do you select particular learning activities (e.g., lectures, current events, simulations, projects, etc.)?
    a) What contextual factors influence your planning? (e.g., access to and comfort with technology, student characteristics/interests, curriculum guides, administrators/colleagues)?
30. What curriculum resources do you use to teach the course?

    Prompt: What textbook, news sources, CEE publications (online and print), and professional development lessons do you use?
31. Walk me through one of your favorite economic lessons.
    a) Why is this lesson one of your favorites?
    b) How do you know if students are engaged and learning?
32. What other instructional practices do you use to keep students interested and engaged in learning that are unique to teaching economics? In other words, you do not use these instructional practices when teaching other subjects.
    a) How do you know if students are engaged and learning?
33. Which of the following types of citizenship skills do these types of instructional practices generally develop in students: personal responsibility, participation in civic life, and/or change agents for social justice issues?
    a) Give examples of economic content, citizenship skills, and related instructional practices.

34. What, if any, types of instructional practices do you use to incorporate students' interests and diverse cultural backgrounds?
    a) Give examples of economic content, student interests/cultures, and related instructional practices.
35. What are your personal strengths in teaching economics?
    Prompt: What do you enjoy most?
36. What are your personal challenges or concerns in teaching economics?
    Prompt: What do you enjoy least?
37. What is the hardest economic concept and skill to teach? Why?
    a) How do you go about teaching the economic concept and skill?
38. How, if at all, do you incorporate current events into your economic instruction?
39. Where do you get your news about current events and the economy?
    a) How would you describe your own political affiliation and opinions?
    b) How do your political views influence your economic instruction?
    c) Do you disclose your personal political opinions? Why?
40. What is your familiarity with the "economic way of thinking"?
    If familiar:
    a) How would you define the "economic way of thinking"?
    Prompt: What are the commonly-used six principles?
    b) Do the six economic principles help students make better sense of the world, in general? Better sense of the economic events featured in the news, in particular? How?
    c) How do you incorporate the "economic way of thinking" into your instruction?
41. How would you describe what it takes to be a highly effective economic teacher?
    Prompt: What does a teacher need to know and be able to do to help students learn economics?

42. Is there anything else you would like to add?

(turn off recorder)

APPENDIX C

MS. MILLER'S MID-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. These mid-interview questions are grouped into the following categories: economic skills, student misconceptions, economic examples, current events, instructional units, and assessment. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. As a reminder, your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Economic Skills

1. The EPF Standards of Learning divide economic content into concept-based and skills-based learning. Skills-based learning includes using economic tools and models to analyze choices of all types, including those featured in the daily news, particularly in terms of how those choices impact students' personal lives.
   The appropriate percentages of both knowledge types—concept-based and skills based— are often debated among economic educators.
   a) In your opinion, what is the ideal breakdown in terms of percentage of class time? Why?
   b) Does this breakdown represent your instructional practices? Why or why not?
   c) Do the quiz/test questions assess concept and skills-based learning accordingly?
2. One way students learn to "think like an economist" is by applying a set of core economic principles to critically think about, thus better understand, the world around them in order to make better decisions for themselves and society. Sets of principles include the HDG and 7 textbook principles in Chapter 1.
   Two learning objectives on weekly lesson plan said:

"Apply the EWT to their own lives." How?
"Research and write about an econ enigma, applying the principles of econ thinking." How?
How did students do on the first test in terms of the 7 economic principles?

a) Any common student misconceptions or difficulties?
b) Are these misunderstandings or areas of struggle common based on previous years?
c) How did students do on the Willy Wonka activity?
d) Any common principle misconceptions or difficulties?
e) Do you find that students need multiple times to practice applying the 7 principles?
f) What instructional practices do you use to remedy these misconceptions?
g) How, if at all, did you or will you use the HDG/7 textbook principles throughout the course? Why or why not?

3. Other than the HDG/7 textbook principles, which of the economic tools and models do you teach students to actually use in real-world decision making and problem solving--that is, beyond just explaining the definitions and concepts?
   a) What are examples of such activities?
      Example: Is PPF a concept applied to personal life or mainly just a mathematical drawing to illustrate the idea of trade-offs?
   b) Do you model your thinking while using these tools? Why or why not?
   c) If so, what are examples of such modeling?
   d) What are your thoughts about using interdisciplinary, inquiry-based learning activities similar to the scientific method whereby students develop questions, apply disciplinary content, gather and evaluate evidence, and draw conclusions and take action?
   e) What percentage of an economic class should be student-centered, hands-on instruction (e.g., activities) versus more teacher-directed instruction (e.g., lecture)?
   f) What are the advantages and disadvantages to student-centered, hands-on instruction?

Economic Misconceptions

4. Teaching future economic teachers to anticipate common misconceptions of economic concepts, principles, and skills is key to effective instruction.
   a) What are common student misconceptions or difficulties with ***any*** of the economic concepts and skills covered thus far, as evident by test results or your prior experiences in teaching the course?
   b) What instructional practices do you use to remedy these misunderstandings?

Economic Examples

5. Do you purposely foreshadow economic concepts in lectures and activities that have not yet been officially introduced to students? Or is it more the interdependent nature of economic concepts?
   a) Do you giving real-world examples and connections before or after introducing official economic term?
   b) Any other instructional advice on how to make real-world connections to economic content for students?

Current Events

6. How do you include current events into your instruction?
   a) Any tips for other teachers?
   b) Do students practice reading and making sense of current economic statistics (e.g., GDP, CPI, and unemployment rates)? Why or Why not? How? Which sources?
   c) What guidelines or questions do you require students to answer when completing current events assignments (e.g., write a one-page summary)?
      NOTE: May I get student work samples before the end of November?
7. Do you intentionally try to keep your opinions and emotions out of your current event and politics instruction? Why? How?
   a) Do you feel you are able to strike a balance between liberal and conservative perspectives in your class? Why? How?
8. What are your most important issues when voting in an election, whether economics-related or not? Rank issues in order.
9. What economic events or controversial issues do you think should be included every year? (e.g., minimum wage)
   a) Which ones are too controversial or political for the classroom, thus you avoid? Why?
10. Research shows that most teachers do not conduct authentic discussions defined as "classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions" (Hadjioannou, 2007, p. 370), but rather just "popcorn" Q & A sessions.
    a) Why do you think that is the case?
    b) What, if any, instructional value do you think authentic discussions have in economic classrooms?
    c) Do you include such authentic discussions in your instructional practices? Why or Why not?

Instructional Units

11. On what are the instructional units sequencing based?
    a) EPF standards? Textbook chapters? Combined document of SOL and which CTE course competencies?
    b) What is the logic behind ordering the units in this way? WI$E test in April
    c) DOE has a curriculum framework for CTE and social studies. What are the differences? Are two different curriculum frameworks needed?
    d) How do you plan for the week? What kinds of lesson plans do you make? (key concepts, activities, EPF standards, etc.)

Assessments

12. How are students doing in the class in terms of their first nine weeks grades?
    a) Why do you think that is?
    b) What kind of remediation do you do?
13. What is the objective of having district-wide common assessments like the Economic Systems brochure?
    a) Are there other similar assessments?
    b) Are they always hands-on?
14. Other than quizzes and tests, what are evidences of student learning?

APPENDIX D

MS. LEVITT'S MID-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. These mid-interview questions are grouped into the following categories: economic skills, student misconceptions, economic examples, current events, instructional units, and assessment. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. As a reminder, your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Economic Skills

1. The EPF Standards of Learning divide economic content into concept-based and skills-based learning. Skills-based learning includes using economic tools and models to analyze choices of all types, including those featured in the daily news, particularly in terms of how those choices impact students' personal lives.
   The appropriate percentages of both knowledge types—concept-based and skills based— are often debated among economic educators.
   a) In your opinion, what is the ideal breakdown in terms of percentage of class time? Why?
   b) Does this breakdown represent your instructional practices? Why or why not?
   c) Do the quiz/test questions assess concept and skills-based learning accordingly?
2. One way students learn to "think like an economist" is by applying a set of core economic principles to critically think about, thus better understand, the world around them in order to make better decisions for themselves and society. Sets of principles include the HDG and 7 textbook principles in Chapter 1.
   You mentioned in class that students did not do well on the first quiz on the EWT.

a) What were student misconceptions or difficulties?
b) Are these misunderstandings or areas of struggle common based on previous years?
c) How did students do on the Willy Wonka test?
d) Any common principle misconceptions or difficulties?
e) What instructional practices do you use to remedy these misconceptions?
f) How, if at all, did you or will you use the HDG/7 textbook principles throughout the course? Why or why not?

3. Other than the HDG/7 textbook principles, which of the economic tools and models do you teach students to actually use in real-world decision making and problem solving--that is, beyond just explaining the definitions and concepts?
   a) What are examples of such activities?
      Example: Is PPF a concept applied to personal life or mainly just a mathematical drawing to illustrate the idea of trade-offs?
   b) What are your thoughts about using interdisciplinary, inquiry-based learning activities suggested by the NCSS C3 Framework where students develop questions, apply disciplinary content, gather and evaluate evidence, and draw conclusions and take action (similar to the scientific method in Chapter 1)?
   c) Do you model your thinking while using these tools? Why or why not?
   d) If so, what are examples of such modeling?

Economic Misconceptions

4. Teaching future economic teachers to anticipate common misconceptions of economic concepts, principles, and skills is key to effective instruction.
   a) What are common student misconceptions or difficulties with ***any*** of the economic concepts and skills covered thus far, as evident by test results or your prior experiences in teaching the course?
   b) What instructional practices do you use to remedy these misunderstandings?

Economic Examples

5. Do you purposely foreshadow economic concepts in lectures and activities that have not yet been officially introduced to students? Or is it more the interdependent nature of economic concepts?
   a) Do you giving real-world examples and connections before or after introducing official economic term?
   b) Any other instructional advice on how to make real-world connections to economic content for students?

Current Events

6. How do you include current events into your instruction?
   a) Any tips for other teachers?
   b) Do students practice reading and making sense of current economic statistics (e.g., GDP, CPI, and unemployment rates)? Why or Why not? How? Which sources?
   c) What guidelines or questions do you require students to answer when completing current events assignments (e.g., write a one-page summary)?
      NOTE: May I get student work samples before the end of November?
7. Do you intentionally try to keep your opinions and emotions out of your current event and politics instruction? Why? How?
   a) Do you feel you are able to strike a balance between liberal and conservative perspectives in your class? Why? How?
8. What are your most important issues when voting in an election, whether economics-related or not? Rank issues in order.
9. What economic events or controversial issues do you think should be included every year? (e.g., minimum wage)
   a) Which ones are too controversial or political for the classroom, thus you avoid? Why?
10. Research shows that most teachers do not conduct authentic discussions defined as "classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions" (Hadjioannou, 2007, p. 370), but rather just "popcorn" Q & A sessions.
    a) Why do you think that is the case?
    b) What, if any, instructional value do you think authentic discussions have in economic classrooms?
    c) Do you include such authentic discussions in your instructional practices? Why or Why not?

Instructional Units

11. On what are the instructional units sequencing based?
    a) EPF standards? Textbook chapters?
    b) What is the logic behind ordering the units in this way?
    c) DOE has a curriculum framework for CTE and social studies. What are the differences? Are two different curriculum frameworks needed?
    d) How do you plan for the week? What kinds of lesson plans do you make? (key concepts, activities, EPF standards, etc.)

Assessments

12. How are students doing in the class in terms of their first nine weeks grades?
    a) Why do you think that is?
    b) What kind of remediation do you do?
13. What is the objective of having district-wide common assessments like the Economic Systems brochure?
    a) Are there other similar assessments?
    b) Are they always hands-on?
14. Other than quizzes and tests, what are evidences of student learning?

APPENDIX E

MS. WILLIAMS' MID-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. These mid-interview questions are grouped into the following categories: economic skills, student misconceptions, economic examples, current events, instructional units, and assessment. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. As a reminder, your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Economic Skills

1. The EPF Standards of Learning divide economic content into concept-based and skills-based learning. Skills-based learning includes using economic tools and models to analyze choices of all types, including those featured in the daily news, particularly in terms of how those choices impact students' personal lives.
   The appropriate percentages of both knowledge types—concept-based and skills based— are often debated among economic educators.
   a) In your opinion, what is the ideal breakdown in terms of percentage of class time? Why?
   b) Does this breakdown represent your instructional practices? Why or why not?
   c) Do the quiz/test questions assess concept and skills-based learning accordingly?
2. One way students learn to "think like an economist" is by applying a set of core economic principles to critically think about, thus better understand, the world around them in order to make better decisions for themselves and society. Sets of basic economic principles include the HDG (and 7 textbook principles in Chapter 1).

I know you gave a handout on the "Boring School Mystery" the first week of class to "get students thinking" about economics, which featured the HDG. How else, if at all, did you cover the basic principles of economic reasoning, such as in the HDG?

a) Any common student misconceptions or difficulties?
b) Are these misunderstandings or areas of struggle common based on previous years?
c) Do you find that students need multiple times to practice applying the principles? (*as per Ms. Levitt, Ms. Miller, and me*)
d) What instructional practices do you use to remedy these misconceptions?
e) How, if at all, will you use the HDG (7 textbook principles) throughout the course? Why or why not?

3. Other than the HDG/7 textbook principles, which of the economic tools and models do you teach students to actually use in real-world decision making and problem solving--that is, beyond just explaining the definitions and concepts?
   a) What are examples of such activities?
      Example: Is PPF a concept applied to personal life or mainly just a mathematical drawing to illustrate the idea of trade-offs?
   b) Was there a particular reason why you did not use the PACED decision making model for the town council candidates activity?
   c) Do you model your thinking while using these tools? Why or why not?
   d) If so, what are examples of such modeling?
   e) What are your thoughts about using interdisciplinary, inquiry-based learning activities similar to the scientific method (refer to chart) whereby students develop questions, apply disciplinary content, gather and evaluate evidence, and draw conclusions and take action?
   f) You mentioned that using hands-on activities if often time-consuming, money intensive, and sometimes don't having the learning outcomes desired (i.e., they don't always work). Any other disadvantages to using student-centered, hands-on instruction?
      1) What are the advantages?
      2) Anything else that you have learned that you can share with other teachers?
   g) What percentage of an economic class should be student-centered, hands-on instruction (e.g., activities) versus more teacher-directed instruction (e.g., lecture)?

Economic Misconceptions

4. Teaching future economic teachers to anticipate common misconceptions of economic concepts, principles, and skills is key to effective instruction.
   a) What are common student misconceptions or difficulties with <u>*any*</u> of the economic concepts and skills covered thus far, as evident by test results or your prior experiences in teaching the course?

b) What instructional practices do you use to remedy these misunderstandings?

Economic Examples

5. Do you purposely foreshadow economic concepts in lectures and activities that have not yet been officially introduced to students? Or is it more the interdependent nature of economic concepts?
   a) Do you giving real-world examples and connections before or after introducing official economic term?
   b) Any other instructional advice on how to make real-world connections to economic content for students?

Current Events

6. How do you include current events into your instruction?
   a) Any tips for other teachers?
   b) Do students practice reading and making sense of current economic statistics (e.g., GDP, CPI, and unemployment rates)? Why or Why not? How? Which sources?
   c) What guidelines or questions do you require students to answer when completing current events assignments (e.g., non-SMG students 3 WSJ article summaries)? NOTE: May I get student work samples before the end of November?
7. Do you intentionally try to keep your opinions and emotions out of your current event and politics instruction? Why? How?
   a) Do you feel you are able to strike a balance between liberal and conservative perspectives in your class? Why? How?
8. What are your most important issues when voting in an election, whether economics-related or not? Rank issues in order.
9. What economic events or controversial issues do you think should be included every year? (e.g., minimum wage)
   a) Which ones are too controversial or political for the classroom, thus you avoid? Why?
10. Research shows that most teachers do not conduct authentic discussions defined as "classroom interactions where participants present and consider multiple perspectives and often use others' input in constructing their contributions" (Hadjioannou, 2007, p. 370), but rather just "popcorn" Q & A sessions.
    a) Why do you think that is the case?
    b) What, if any, instructional value do you think authentic discussions have in economic classrooms?
    c) Do you include such authentic discussions in your instructional practices? Why or Why not?

Instructional Units

11. You mentioned that you are still trying to figure out in what order to teach the course's economic units. What are you currently using to sequence your economic units?
    a) EPF standards? Textbook chapters? Combined document of SOL and which CTE course competencies like in CCPS?
    b) What is the logic behind ordering the units in this way? WI$E test in April?
    c) Why did you cover the Fed so early in the semester? Why is this important for students to understand in the beginning of the year?
    d) I noticed that you taught the Federal Reserve and then moved into the economic principle "voluntary trade creates wealth" using environmental cartoons then into calculating profit. How, if at all, do you tie units together for students? Or do you teach them as isolated units?
    e) Do you think starting with the SMG is effective in terms of learning the economic content?
    f) Most people often have misconceptions about the study of economics in that it is all about money. Student pre-surveys indicated the same misconception across the board. Do you think starting the year with the SMG helps remedy or perpetuates this common misconception?
    g) Why is talking about industries so important when teaching economics (as per pre-interview and this class observation)?
    h) Which is more important for students to learn, the EPF standards for economics or personal finance? Why?
    i) DOE has a curriculum framework for CTE and social studies. What are the differences? Are two different curriculum frameworks needed?
    j) How do you plan for the week? What kinds of lesson plans do you make? (key concepts, activities, EPF standards, etc.)

Assessments

12. How are students doing in the class in terms of their first nine weeks grades?
    a) Why do you think that is?
    b) What kind of remediation do you do?
13. Are there any district-wide common assessments (e.g., Economic Systems brochure)?
    a) Are there other similar assessments?
    b) Are they always hands-on?
14. Other than quizzes and tests, what are evidences of student learning?

APPENDIX F

MS. MILLER'S POST-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. The post-interview questions are grouped into four main categories: instructional goals and practices, course beliefs, post-survey and post-test, PLC/Department meetings. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. Your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Instructional Goals

1. How do you think your economic instruction went last semester?
   a) What changes, if any, will you make to your instruction for next year? Why?
   b) What instructional practices seemed to engage the students the most? The least?
   Why?
2. Based on the card sort activity we did during the pre-interview, one of your economic instructional goals at the beginning of the school year was: "Forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters."
   a) How have you been successful in meeting that particular goal? Not been successful? b) Any changes for next year regarding that particular goal?
3. What is the most important thing students should have learned from your economic instruction? Why?
4. How are students doing in the class in terms of their semester grades? Why do you think that is?

Instructional Practices

Online Course Component

5. When and how are you doing the online portion of the course?
6. The website says "course will develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem-solving." How is this true? Not true?

Technology

7. How did you use technology to teach economics (beyond the SMG online simulation and online learning software)?
    a) Is there a use for social media and mobile apps in teaching economics?

Questioning Strategies

8. What is your questioning strategy? That is, how do you using questioning as an instructional practice?
    a) Any tips for new teachers?

Current Events

9. How confident are you that students will better understand economic events discussed in the evening news? Why?
    a) What about casting an informed vote in an election based, in part, on the politicians' economic platform? Why?

Multiple Perspectives

10. How do you incorporate multiple perspectives or differing points of view in your instruction?

Controversial Issues

11. How has administration—both district and school-level—advised teachers, if at all, on how to approach controversial or sensitive issues, or is your approach based on your own protocol or personal experiences?

Culturally Relevant and Social Justice Teaching

12. Have you had coursework or professional development training in culturally relevant teaching practices? Social justice teaching practices?
13. What are you opinions regarding these two types of teaching practices in high school economic courses?
14. Is coursework or professional development training in one or both types of teaching practices necessary for economic teachers? Why?

Citizenship Skills / Types of Citizenship

Differentiating between the three types of citizenship using a local food drive as an example (Westheimer & Kahn, 2004), personally responsible citizenship instruction teaches students the importance of contributing food to a food drive. Participatory citizenship instruction teaches students how to help organize the food drive. Social justice-oriented instruction has students question, debate, and act to solve the root causes of hunger.

15. Do you think economic teachers should strive to develop all three types of citizenship? Why or why not?
16. If applicable, in what ways has your economic instruction developed participatory citizenship skills in students? Social justice-oriented citizenship skills?

Interdisciplinary Instruction

17. How important is it for economic teachers to deliver inter/multidisciplinary instruction? That is, making curriculum connections between economics and:
    a) Social Studies subjects?
    b) CTE subjects?
    c) Core subjects (e.g., math, English, and science)?

Economic Reasoning

18. I am asking the following couple of questions because I was unable to observe your class every day, thus likely missed some of the topics you covered. Did you explicitly cover cost-benefit analysis? How?

Classroom Management

19. What is your classroom management philosophy?

Professional Learning Community (PLC) Meetings

20. What is the goal of the PLC meetings?
    a) What is the format? Benefits? Challenges?
    b) How effective are the meeting in terms of improving your instructional practices in economics?
    c) What changes, if any, would to make to the PLC meetings to better improve your instructional practices in economics?
    d) Is there collaboration with other disciplines (e.g., history and math teachers, etc.)?
    e) Regarding PLC meetings, what are instructional examples of when CTE and SS teachers disagree? When is there consensus?

Post-survey and Post-test

Post-survey Statements

21. While the post-survey statement class averages show a considerable increase in students believing economics is important to being a good citizen, there were decreases in the class averages for the following statements:
    a) I think economics is interesting (-0.11)
    b) Understanding economics helps make sense of the world (-0.11)
    c) I enjoy discussing economics in school (-0.39)

    Why do you think that is?

Post-survey Short Answer

22. Regarding Question 1 on the post-survey short answer section (i.e., What is your definition of economics?), more than half of students talked mainly about money, about one-third talked in general terms about understanding the world better. What are your thoughts, considering a high school textbook definition of economics is "the study of how people choose to use their limited resources to satisfy their unlimited wants."
23. Regarding Question 2 on the post-survey short answer section (i.e., How does economics relate to your life?), more than a third said something about money, about one-sixths said it doesn't relate at all. What are your thoughts?

TEL Post-test

24. Which economic topics are left? Woven in personal finance? Taught after personal finance?
25. What are your thoughts about the test? Comprehensive? Difficulty level?
26. What are your thoughts on why the average class percentage increase on the posttest was relatively small and still below 52%?

    **After the interview, let's look at the actual test question topics to determine which topics you covered prior to the students taking the posttest.

Course Beliefs

27. Should there be two separate economic courses offered in high schools based on ability levels: a regular economic course offered to the average student who probably won't go to college (i.e., a life skills class) and an advanced course for college-bound students (i.e., a more theoretical class)? Why or why not?
    a) How would they differ?
    b) Should there be more time for students to practice applying economic reasoning tools (e.g., EWT, PACED, C-B analysis, supply and demand, and PPF)? That is, more skills-based instruction and less concept-based instruction? Why?

c) Which teacher should teach each course: regular economics and advanced economics? Social Studies or CTE? Why?

28. Is there anything else you would like to add?

(turn off recorder)

APPENDIX G

MS. LEVITT'S POST-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. The post-interview questions are grouped into four main categories: instructional goals and practices, course beliefs, post-survey and post-test, PLC/Department meetings. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. Your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Instructional Goals

1. How do you think your economic instruction went last semester?
   a) What changes, if any, will you make to your instruction for next year? Why?
   b) What instructional practices seemed to engage the students the most? The least?
   Why?
2. Based on the card sort activity we did during the pre-interview, one of your economic instructional goals at the beginning of the school year was: "Forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters."
   a) How have you been successful in meeting that particular goal? Not been successful? b) Any changes for next year regarding that particular goal?
3. What is the most important thing students should have learned from your economic instruction? Why?
4. How are students doing in the class in terms of their semester grades? Why do you think that is?

Instructional Practices

Online Course Component

5. When and how are you doing the online portion of the course?
6. The website says "course will develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem-solving." How is this true? Not true?

Technology

7. How did you use technology to teach economics (beyond the SMG online simulation and online learning software)?
    a) Is there a use for social media and mobile apps in teaching economics?

Questioning Strategies

8. What is your questioning strategy? That is, how do you using questioning as an instructional practice?
    a) Any tips for new teachers?

Current Events

9. How confident are you that students will better understand economic events discussed in the evening news? Why?
    a) What about casting an informed vote in an election based, in part, on the politicians' economic platform? Why?

Multiple Perspectives

10. How do you incorporate multiple perspectives or differing points of view in your instruction?

Controversial Issues

11. How has administration—both district and school-level—advised teachers, if at all, on how to approach controversial or sensitive issues, or is your approach based on your own protocol or personal experiences? Debbie – no issues off limits

Culturally Relevant and Social Justice Teaching

12. Have you had coursework or professional development training in culturally relevant teaching practices? Social justice teaching practices?
13. What are you opinions regarding these two types of teaching practices in high school economic courses?
14. Is coursework or professional development training in one or both types of teaching practices necessary for economic teachers? Why?

Citizenship Skills / Types of Citizenship

Differentiating between the three types of citizenship using a local food drive as an example (Westheimer & Kahn, 2004), personally responsible citizenship instruction teaches students the importance of contributing food to a food drive. Participatory citizenship instruction teaches students how to help organize the food drive. Social justice-oriented instruction has students question, debate, and act to solve the root causes of hunger.

15. Do you think economic teachers should strive to develop all three types of citizenship? Why or why not?
16. If applicable, in what ways has your economic instruction developed participatory citizenship skills in students? Social justice-oriented citizenship skills?

Interdisciplinary Instruction

17. How important is it for economic teachers to deliver inter/multidisciplinary instruction? That is, making curriculum connections between economics and:
    a) Social Studies subjects?
    b) CTE subjects?
    c) Core subjects (e.g., math, English, and science)?

Economic Reasoning

18. I am asking the following couple of questions because I was unable to observe your class every day, thus likely missed some of the topics you covered.
    a) Did you cover PPF? Cost-Benefit Analysis? How?

Classroom Management

19. What is your classroom management philosophy?

Professional Learning Community (PLC) Meetings

20. What is the goal of the PLC meetings?
    a) What is the format? Benefits? Challenges?
    b) How effective are the meeting in terms of improving your instructional practices in economics?
    c) What changes, if any, would to make to the PLC meetings to better improve your instructional practices in economics?
    d) Is there collaboration with other disciplines (e.g., history and math teachers, etc.)?
    e) Regarding PLC meetings, what are instructional examples of when CTE and SS teachers disagree? When is there consensus?

Post-survey and Post-test

Post-survey Statements

21. While the post-survey statement class averages show a considerable increase in students saying they better understand economics in the news and enjoy discussing economics in school and with family and friends, there was a decrease in the class average for the following statement:
    a) Economics relates to my life (-0.12)
    b) No change in the following statement: Understanding economics helps make sense of the world (0.00)
    c) And only a small increase in the statement: I think economics is important (0.06)

    Why do you think that is?

Post-survey Short Answer

22. Regarding Question 1 on the post-survey short answer section (i.e., What is your definition of economics?), more than half of students talked mainly about money while about one-third talked in general terms about understanding the world better. What are your thoughts, considering a high school textbook definition of economics is "the study of how people choose to use their limited resources to satisfy their unlimited wants."
23. Regarding Question 2 on the post-survey short answer section (i.e., How does economics relate to your life?), almost two-thirds mention money and almost one-third said in the choices they make in life. What are your thoughts?

TEL Post-test

24. Which economic topics are left? Woven in personal finance? Taught after personal finance?
25. What are your thoughts about the test? Comprehensive? Difficulty level?
26. What are your thoughts on why the average class percentage increase on the posttest was relatively small and still below 52%?

    **After the interview, let's look at the actual test question topics to determine which topics you covered prior to the students taking the posttest.

Course Beliefs

27. Should there be two separate economic courses offered in high schools based on ability levels: a regular economic course offered to the average student who probably won't go to college (i.e., a life skills class) and an advanced course for college-bound students (i.e., a more theoretical class)? Why or why not?
    a) How would they differ?
    b) Should there be more time for students to practice applying economic reasoning tools (e.g., EWT, PACED, C-B analysis, supply and demand, and

PPF)? That is, more skills-based instruction and less concept-based instruction? Why?
c) Which teacher should teach each course: regular economics and advanced economics? Social Studies or CTE? Why?

28. Is there anything else you would like to add?

(turn off recorder)

APPENDIX H

MS. WILLIAMS' POST-INTERVIEW PROTOCOL

Introduction

Thank you so much for agreeing to be interviewed again for my dissertation study. As a reminder, the purpose of this study is to better understand what economic teachers need to know and be able to do in order to help students learn economic concepts and skills. Therefore, I am most interested in learning from your experiences in teaching economics, so there are no "right" or "wrong" answers. I am mainly interested in reporting "best practices" from which other teachers may improve their instruction. There may be times when I prompt you to elaborate on something you say in order to gain a richer understanding of your experiences or to clarify a particular meaning I sense you are conveying. The post-interview questions are grouped into four main categories: instructional goals and practices, course beliefs, post-survey and post-test, PLC/Department meetings. Each question is designed to follow-up on observation field notes, unanswered researcher questions, and new questions that arose since the last interview. The ultimate goal is to create the most valid interpretations of your economic instructional practices as possible. I will audiotape and later transcribe the interview to be sure I capture your experiences as accurately as possible. Your name will be replaced with a pseudonym to keep your identity confidential. Do you have any questions before we begin?

(turn on recorder)

Instructional Goals

1. How do you think your economic instruction went last semester?
    a) What changes, if any, will you make to your instruction for next year? Why?
    b) What instructional practices seemed to engage the students the most? The least? Why?
2. Based on the card sort activity we did during the pre-interview, one of your economic instructional goals at the beginning of the school year was: "Forming critically-minded, reflective citizens who make intelligent decisions in citizenship roles such as workers, consumers, and voters."
    a) How have you been successful in meeting that particular goal? Not been successful? b) Any changes for next year regarding that particular goal?
3. What is the most important thing students should have learned from your economic instruction? Why?
4. How are students doing in the class in terms of their semester grades? Why do you think that is?

Instructional Practices

Online Course Component

5. When and how are you doing the online portion of the course?
6. The website says "course will develop thinking skills that include analyzing real-world situations, economic reasoning, decision making, and problem-solving." How is this true? Not true?

Technology

7. How did you use technology to teach economics (beyond the SMG online simulation and online learning software)?
    a) Is there a use for social media and mobile apps in teaching economics?

Questioning Strategies

8. What is your questioning strategy? That is, how do you using questioning as an instructional practice?
    a) Any tips for new teachers?

Current Events

9. How confident are you that students will better understand economic events discussed in the evening news? Why?
    a) What about casting an informed vote in an election based, in part, on the politicians' economic platform? Why?

Multiple Perspectives

10. How do you incorporate multiple perspectives or differing points of view in your instruction?

Controversial Issues

11. How has administration—both district and school-level—advised teachers, if at all, on how to approach controversial or sensitive issues, or is your approach based on your own protocol or personal experiences? Jeanne – student-led issues after introducing like Ferguson

Culturally Relevant and Social Justice Teaching

12. Have you had coursework or professional development training in culturally relevant teaching practices? Social justice teaching practices?
13. What are you opinions regarding these two types of teaching practices in high school economic courses?
14. Is coursework or professional development training in one or both types of teaching practices necessary for economic teachers? Why?

Citizenship Skills / Types of Citizenship

Differentiating between the three types of citizenship using a local food drive as an example (Westheimer & Kahn, 2004), personally responsible citizenship instruction teaches students the importance of contributing food to a food drive. Participatory citizenship instruction teaches students how to help organize the food drive. Social justice-oriented instruction has students question, debate, and act to solve the root causes of hunger.

15. Do you think economic teachers should strive to develop all three types of citizenship? Why or why not?
16. If applicable, in what ways has your economic instruction developed participatory citizenship skills in students? Social justice-oriented citizenship skills?

Interdisciplinary Instruction

17. How important is it for economic teachers to deliver inter/multidisciplinary instruction? That is, making curriculum connections between economics and:
    a) Social Studies subjects?
    b) CTE subjects?
    c) Core subjects (e.g., math, English, and science)?

Economic Reasoning

18. I am asking the following couple of questions because I was unable to observe your class every day, thus likely missed some of the topics you covered.
    a) Did you cover PPF? Supply and Demand? Cost-Benefit Analysis? How?

Classroom Management

19. What is your classroom management philosophy?

Professional Learning Community (PLC)/Department Meetings

20. Do you have PLC meetings?

    What is the goal of the Department meetings?

    a) What is the format? Benefits? Challenges?

    b) How effective are the meetings in terms of improving your instructional practices in economics?

    c) What changes, if any, would to make to the departments meetings to better improve your instructional practices in economics?

    d) Is there collaboration with other disciplines (e.g., history and math teachers, etc.)?

    e) Regarding departments meetings, what are instructional examples of when CTE and SS teachers disagree? When is there consensus?

    f) How, if at all, would a county-wide economic PLC benefit your instruction? How do you envision the format?

Post-survey and Post-test

Post-survey Statements

21. While the post-survey statement class averages show considerable increases in students feeling knowledgeable about economics and being able to understand economic events in the news, there were decreases in the class averages for the following statements:
    a) I think economics is important (-0.20)
    b) I think understanding economics is important to being a good citizen (-0.20)
    c) Economics relates to my life (-0.27)
    Why do you think that is?

Post-survey Short Answer

22. Regarding Question 1 on the post-survey short answer section (i.e., What is your definition of economics?), more than two-thirds of students talked mainly about money and about one-third talked about business. What are your thoughts, considering a high school textbook definition of economics is "the study of how people choose to use their limited resources to satisfy their unlimited wants."
23. Regarding Question 2 on the post-survey short answer section (i.e., How does economics relate to your life?), More than half said something about money and almost one-third said it doesn't relate at all. What are your thoughts?

TEL Post-test

24. Which economic topics are left? Woven in personal finance? Taught after personal finance?
25. What are your thoughts about the test? Comprehensive? Difficulty level?
26. What are your thoughts on why the average class percentage increase on the posttest was relatively small and still below 52%?
    **After the interview, let's look at the actual test question topics to determine which topics you covered prior to the students taking the posttest.

Course Beliefs

27. Should there be two separate economic courses offered in high schools based on ability levels: a regular economic course offered to the average student who probably won't go to college (i.e., a life skills class) and an advanced course for college-bound students (i.e., a more theoretical class)? Why or why not?
    a) How would they differ?
    b) Should there be more time for students to practice applying economic reasoning tools (e.g., EWT, PACED, C-B analysis, supply and demand, and PPF)? That is, more skills-based instruction and less concept-based instruction? Why?

c) Which teacher should teach each course: regular economics and advanced economics? Social Studies or CTE? Why?

28. Is there anything else you would like to add?

(turn off recorder)

APPENDIX I

TEACHER PRE-QUESTIONNAIRE

Teacher name:					
Academic degree(s) including major/minor or concentration:					
Number and name of economic courses taken for degree(s) listed above:					
Estimated professional development *hours* in economic education:					
Specific professional development *topics* in economic education:					
College/university courses taken in economics and/or economic education *beyond* degrees listed above (please include course name, number of credits, and accrediting institution):					
Previous career(s):					
Total number of years teaching:					
Grade levels taught:					
Total number of years teaching in your current school division: Your school:					
Extra-curricular positions for the 2014-15 school year:					
Main subjects taught over teaching career:					
Favorite subject(s) to teach? Why?					
Least favorite subject(s) to teach? Why?					
Number of times you have taught the new economic course (please specify if the course was a semester-long economic course or year-long economic course combined with personal finance):					
Please highlight the number that best corresponds to your feelings regarding the two statements below. For each statement, 1 is "Strongly Disagree" and 5 is "Strongly Agree." Please also provide a brief rationale for your rating.					
	Strongly Disagree				Strongly Agree
1a) I am confident in my level of economic content knowledge, as required to teach a high school economic course.	1	2	3	4	5
1b) Rationale for rating:					
	Strongly Disagree				Strongly Agree
2a) I am confident in my ability to deliver effective economic instruction to high school students.	1	2	3	4	5
2b) Rationale for rating:					
Please add any additional comments that you have here:					

Thank you!

APPENDIX J

TEACHER POST-QUESTIONNAIRE

TEACHER AWARDS
Please list all the teacher awards you have received, including ones not related to economic education. Please provide a brief description of the award if it is not clear by the title.
Economic Education Awards
NON-Economic Education Awards

STUDENT AWARDS
Please list all the awards your students have won under your guidance (e.g., FBLA, Economics Challenge, SMG, etc.), including ones not related to economic education. Please provide a brief description of the award if it is not clear by the title.

PRE/POST-TEST
After omitting questions not covered last semester, your class average pre/post-test scores went from XX% to XX%--an increase of XX%. If any, please add any additional thoughts about this data not expressed during the post-interview. ***A copy of the post-test is attached to the email.***

STUDENT DATA
Please fill in the student data below based on the class that I observed. This will also help contextualize the pre/post-test data.
Student Ability Levels:
I wasn't sure of the exact titles for each ability level, so please correct if necessary.
Advanced/AP:
General:
Special Education:
Semester Grades:
Please list the number of students who earned each of the following semester grades. Please also give a general reason why each student got a D or F (e.g., excessive absenteeism, incomplete work, etc.)
A:
B:
C:
D (include reasons):
F (include reasons):

OUTSTANDING ECONOMIC EDUCATOR OF THE YEAR AWARD
This is the award by which you were chosen to participate in this study. If possible, please send a copy of the complete application you submitted to the Center for Economic Education (including letters of recommendation). If you didn't keep a copy of your application, please just let me know here, so I can ask the Center to send it to me. Thanks!

Thank you!

APPENDIX K

STUDENT PRE-SURVEY

Please circle the number that best corresponds to your feelings about each statement below. For each statement, 1 is "Strongly Disagree" and 5 is "Strongly Agree."

	Strongly Disagree				Strongly Agree
1) I think economics is important.	1	2	3	4	5
2) I think economics is interesting.	1	2	3	4	5
3) Economics is easy for me to understand.	1	2	3	4	5
4) I consider myself knowledgeable about economics.	1	2	3	4	5
5) I think understanding economics is important to being a good citizen.	1	2	3	4	5
6) I think only politicians and business owners should understand economics.	1	2	3	4	5
7) Understanding economics helps make sense of the world.	1	2	3	4	5
8) Understanding economics is necessary for casting an informed vote in elections.	1	2	3	4	5
9) Understanding economics helps make better personal finance decisions.	1	2	3	4	5
10) I pay attention to economic events in the news.	1	2	3	4	5
11) I understand economic events in the news.	1	2	3	4	5
12) I use basic economic concepts to understand economic events in the news.	1	2	3	4	5
13) I use the "economic way of thinking" to understand the world around me.	1	2	3	4	5
14) I talk about economics with friends and family.	1	2	3	4	5

15) I enjoy discussing economics in school.	1	2	3	4	5
16) I have had many opportunities to discuss economics in school.	1	2	3	4	5
17) Economics relates to my life.	1	2	3	4	5

Student Demographic Data

Please circle or write your answers below. You may circle more than one answer. Please write your answer if you select "other".

1) What is your gender? Male Female
2) What is your age? 13 14 15 16 17 18 19
3) What is your race? White Black Hispanic Asian Other (please specify):
4) What is your grade level? 9th 10th 11th 12th
5) What is your approximate grade point average (GPA)? 4.0(A) 3.0(B) 2.0(C) D or F Unsure
6) What are your plans after you graduate from high school? Get a job Go to college Both Other (please specify):
7) What grade do you expect to earn in this economic class? A B C D F
8) What is your definition of *economics*?
9) How does economics relate to your life?
10) Give 2 or 3 examples of how economics relates to other subjects.
11) What economic events are currently being discussed in the news?
12) Which of the following types of economic reasoning skills do you use to understand the world around you? Please circle all that apply.

A. decision making model
B. cost and benefit analysis
C. economic way of thinking
D. thinking at the margin
E. other (please specify):

☺ THANK YOU! ☺

APPENDIX L

STUDENT POST-SURVEY

Please circle the number that best corresponds to your feelings about each statement below. For each statement, 1 is "Strongly Disagree" and 5 is "Strongly Agree."

	Strongly Disagree				Strongly Agree
1) I think economics is important.	1	2	3	4	5
2) I think economics is interesting.	1	2	3	4	5
3) Economics is easy for me to understand.	1	2	3	4	5
4) I consider myself knowledgeable about economics.	1	2	3	4	5
5) I think understanding economics is important to being a good citizen.	1	2	3	4	5
6) I think only politicians and business owners should understand economics.	1	2	3	4	5
7) Understanding economics helps make sense of the world.	1	2	3	4	5
8) Understanding economics is necessary for casting an informed vote in elections.	1	2	3	4	5
9) Understanding economics helps make better personal finance decisions.	1	2	3	4	5
10) I pay attention to economic events in the news.	1	2	3	4	5
11) I understand economic events in the news.	1	2	3	4	5
12) I use basic economic concepts to understand economic events in the news.	1	2	3	4	5
13) I use the "economic way of thinking" to understand the world around me.	1	2	3	4	5
14) I talk about economics with friends and family.	1	2	3	4	5

15) I enjoy discussing economics in school.	1	2	3	4	5
16) I have had many opportunities to discuss economics in school.	1	2	3	4	5
17) Economics relates to my life.	1	2	3	4	5

Short Answer

1) What is your definition of *economics*?
2) How does economics relate to your life?
3) Give 2 or 3 examples of how economics relates to other subjects.
4) What economic events are currently being discussed in the news?
5) Which of the following types of economic reasoning skills do you use to understand the world around you? Please circle all that apply.
    A. decision making model
    B. cost and benefit analysis
    C. economic way of thinking
    D. thinking at the margin
    E. other (please specify):
6) Thinking ahead, when might you use your new economic knowledge and skills in the future?
7) What have you enjoyed about this economic class?
8) How might this economic class be improved?
9) What aspects of your teacher's instruction do you feel were especially good?
10) What changes could be made to improve your teacher's instruction?

APPENDIX M

TEST OF ECONOMIC LITERACY (TEL) POST-TEST

FORM **B**

TEST OF ECONOMIC LITERACY

FOURTH EDITION

Directions

1. Please fill out the information requested on the answer sheet before beginning your test.
2. Do not write in this booklet or make other marks in it unless your teacher tells you to do so.
3. When marking your answer sheet, use *only* a regular No. 2 pencil. DO NOT USE A BALLPOINT PEN. Do not make any stray marks on the answer sheet. If you make a mistake, erase *completely* the answer you wish to change.
4. This test is designed to measure your understanding of economics. Not all students will have taken a separate course in economics, but most have learned something about the subject in their other courses, through reading newspapers, listening to the radio, and watching television, or from some other source. These questions will measure how well you understand the principles of economics and the way our economy works.
5. You should try to answer *every* question by marking what you think is the best choice. You might not know the answers to some questions, but use the information you *do* have to eliminate those you think are incorrect and select your best answer. Work at a comfortable speed, but do not spend too much time on any one item. The test consists of 40 questions or incomplete statements, for which you should choose the **one best answer**. With some items, more than one answer may appear to be correct, but your task is to choose the *best* answer.

Sample Question 1

In our economy, income is usually received in the form of

A. basic necessities.
B. services.
C. money.
D. wealth.

Sample of Answer Sheet

	A	B	C	D
1.	○	○	●	○

Sample Question 2

The federal government exercises the closest control over

A. the money supply.
B. computer sales.
C. food distribution.
D. oil companies.

Sample of Answer Sheet

	A	B	C	D
2.	●	○	○	○

DO NOT TURN THE PAGE AND BEGIN THE TEST UNTIL YOU ARE TOLD TO DO SO.

Prepared by William B. Walstad, Ken Rebeck, and Roger B. Butters
for the Council for Economic Education

TEST OF ECONOMIC LITERACY, Form B

1. The opportunity cost of a new city park is the

A. cost of staff and maintenance for the park.
B. increased congestion from traffic around the park.
C. best alternative use of resources given up for the park.
D. lack of personal incentive for people to take care of a public park.

2. Which do economists consider to be a productive resource (factor of production)?

A. Labor.
B. Profit.
C. Money.
D. Interest.

3. In every economic system, people must choose how to

A. satisfy all of the wants of society.
B. make the best use of scarce resources.
C. create an equal distribution of income.
D. save money to reduce the national debt.

4. A small business would like to hire more workers. Each additional worker hired costs the business $100 a day. The additional revenue the business receives from having more workers is $150 per day for the first worker, $130 per day for the second worker, $110 per day for the third worker, and $90 for the fourth worker. How many workers in total should the business hire to maximize its profits?

A. One worker.
B. Two workers.
C. Three workers.
D. Four workers.

5. The essential difference between a command economy and a market economy is that in a market economy

A. shortages occur more often than surpluses.
B. buyers and sellers determine resource allocation.
C. central planning creates an effective incentive system for consumers and producers.
D. the prices of products and resources are largely determined by government regulation of businesses.

6. Which is a basic economic question that must be answered by all economic systems?

A. How will corporations be organized?
B. How can markets be kept competitive?
C. Which goods and services will be produced?
D. Which form of central planning will the government use?

7. Profits are equal to total

A. revenue minus total cost.
B. assets minus total liabilities.
C. sales minus wages and salaries.
D. sales minus taxes and depreciation.

8. If the government decides to increase the payroll taxes on the wages and salaries of workers, then there will most likely be:

A. an increase in saving.
B. an increase in investment.
C. a decrease in unemployment.
D. a decrease in consumption.

9. A high school student buys a dinner at a restaurant. The restaurant offers a special price that takes 20 percent off the regular price of the dinner. In this exchange,

A. the student and the restaurant benefit.
B. the student benefits, but the restaurant does not.
C. the restaurant benefits, but the student does not.
D. neither the student nor the restaurant benefits.

10. Some members of Congress want to increase the general level of tariffs. If this increase occurs, then we should expect

A. a decrease in U.S. inflation.
B. a decrease in U.S. import quotas.
C. a decrease in imports into the U.S.
D. an increase in U.S. exports to other nations.

11. The specialization of labor usually results in

A. an increase in inflation.
B. a more equal distribution of income.
C. an increase in output per hour worked.
D. a decrease in economic interdependence.

12. Which best describes what the law of comparative advantage means for trading nations? Each trading nation can benefit by exporting goods that

A. it produces at low opportunity costs and importing goods it produces at high opportunity costs.
B. it produces at high opportunity costs and importing goods it produces at low opportunity costs.
C. people enjoy least and importing goods that they enjoy most.
D. people enjoy most and importing goods that they enjoy least.

13. When there is a surplus of a product in a competitive market, it is usually the case that the

A. market price of the product will eventually decrease.
B. market price of the product will eventually increase.
C. quantity of the product exchanged in the market will eventually decrease.
D. quantity of the product exchanged in the market will not change, but supply will increase.

14. The exchange rate between the U.S. dollar and the Japanese yen changes from $1=100 yen to $1=125 yen. This change means that

A. there will be an increase in U.S. exports to Japan.
B. there will be a decrease in U.S. exports to Japan.
C. Japanese goods will be more expensive for Americans.
D. U.S. goods will be less expensive for Japanese.

15. If the government charges a new tax of $1 on every pair of blue jeans sold, which would most likely result?

A. Consumers would pay a higher price for blue jeans and buy fewer pairs of blue jeans.
B. Consumers would pay a higher price for blue jeans and blue jeans sellers would make larger profits.
C. Consumers would pay a higher price and blue jeans sellers would limit the number blue jeans consumer could buy.
D. Blue jeans sellers would increase the quantity sold in order to make up for the taxes paid to the government.

16. Which would most likely decrease the quantity of corn sold in a competitive market?

A. An increase in the price of fertilizer.
B. An increase in the incomes of consumers.
C. A decrease in the price of farm equipment.
D. An improvement in the technology of growing corn.

17. A newspaper reports that the price of oranges increased and the quantity sold decreased. In a competitive market, this situation would most likely be the result of

A. a decrease in demand.
B. an increase in demand.
C. an increase in supply.
D. a decrease in supply.

18. Business firms wish to sell their products at high prices. Households wish to buy products at low prices. In a market economy this conflict of interest is resolved by

A. lawsuits.
B. competition.
C. collective bargaining.
D. government regulation.

19. A newspaper reports, "COFFEE GROWERS' MONOPOLY BROKEN INTO SEVERAL COMPETING FIRMS." If this is true, we would expect the coffee-growing industry to

A. decrease output and decrease prices.
B. increase output and increase prices.
C. decrease output and increase prices.
D. increase output and decrease prices.

20. Which is most essential for an efficient market economy?

A. Effective labor unions.
B. Strong government regulation.
C. Active competition in the marketplace.
D. Responsible decisions by business leaders.

21. The major purpose of the commercial banking system in the economy is to

A. sell corporate stocks and bonds.
B. hold financial assets for the Federal Reserve System.
C. loan funds from depositors to credit-worthy borrowers.
D. earn a rate of return on money invested with government agencies.

22. When workers join unions and elect representatives to negotiate with their employers, this is referred to as

A. a closed shop.
B. the seniority system.
C. collective bargaining.
D. right to work legislation.

23. Which item is included in the basic money supply in the United States?

A. Gold.
B. Silver.
C. Corporate bonds.
D. Checking account deposits.

24. When commercial banks increase their loans to businesses and consumers, this usually results in

A. a decrease in the spending power of consumers and businesses.
B. an increase in government control over the economy.
C. an increase in the banks' excess reserves.
D. an increase in the nation's money supply.

25. Inflation is a

A. sharp rise in the price of a major product.
B. substantial decline in the consumer price index.
C. sustained increase in the general level of prices.
D. rapid movement of the economy toward full-employment.

26. A decrease in real interest rates provides an incentive for people to save

A. more and borrow more.
B. less and borrow less.
C. more and borrow less.
D. less and borrow more.

27. Which best describes the general relationship between the risk that a business will default on a loan and the interest rate charged for the loan?

A. A lower interest rate is charged on loans with more risk of default.
B. A higher interest rate is charged on loans with less risk of default.
C. A lower interest rate is charged on loans with less risk of default.
D. The interest rate charged on loans is the same regardless of the risk of default.

28. In a market economy, high wages depend mostly on

A. responsible business leaders.
B. high output per worker.
C. actions of government.
D. minimum wage laws.

29. Why do medical doctors generally earn more than farmers?

A. Medical doctors are more efficient than farmers.
B. Medical doctors provide a service rather than make a product.
C. There are fewer medical doctors than farmers in our economy.
D. Medical doctors are scarcer, given the demand for their services.

30. People who take the risks of organizing productive resources to produce goods and services in the expectation of making profits are

A. economists.
B. stockbrokers.
C. entrepreneurs.
D. business managers.

31. Which would most likely decrease the productivity of labor?

A. A rise in the pay of workers.
B. A fall in the rate of interest.
C. A reduction in the tax rates on income.
D. A decline in the amount of capital goods.

32. Economies that grow rapidly over time usually have a high rate of

A. growth in gold reserves.
B. capital investment.
C. unemployment.
D. tariffs.

33. Government rather than private business provides a public good such as flood control because

A. private businesses do not like to produce services for the government.
B. those who do not pay for a public good still receive the benefits.
C. when a person uses a public good, less is available for others.
D. a public good does not benefit individuals.

34. The tax described in the table below is a

A. flat tax on income.
B. progressive income tax.
C. proportional income tax.
D. regressive income tax.

STATE TAX TABLE	
Income	Percentage Tax Rate
$0 – $10,000	0
$10,001 – $40,000	10
$40,001 – $90,000	20
$90,001 and above	30

35. Suppose that the U.S. Congress sets up a program to provide financial assistance to banks to prevent them from failing. This action will likely create a moral hazard problem because it may:

A. restrict bank investments in real estate.
B. encourage bank officials to make riskier loans.
C. reduce the amount of deposits made by bank customers.
D. increase the screening by banks of deposits from bank customer.

36. Gross domestic product (GDP) is a measure of

A. the price level of goods and services sold.
B. total spending by federal, state, and local governments.
C. the quantity of goods and services produced by private businesses.
D. the market value of the nation's output of final goods and services.

37. A nation has an international trade surplus when

A. its exports are greater than its imports.
B. its imports are greater than its exports.
C. its tax revenues are greater than its government expenditures.
D. its gold reserves are greater than gold reserves of its trading partners.

38. Which best measures a nation's standard of living over time?

A. Rate of inflation.
B. Rate of unemployment.
C. Real income per capita.
D. Money income per capita.

39. The maximum output a nation could possibly produce in any one year is limited by its

A. productive resources.
B. business investment.
C. unemployment rate.
D. consumer income.

40. Which would usually increase total spending in the economy?

A. An increase in tax rates.
B. An increase in interest rates.
C. An increase in the savings rate.
D. An increase in business investment.

41. During a recession in an economy, there will be an increase in

A. imports.
B. unemployment.
C. economic growth.
D. business spending.

42. Unexpected inflation is most likely to benefit people

A. saving money in accounts at financial institutions.
B. owing money on loans at fixed interest rates.
C. living on fixed incomes and pensions.
D. holding life insurance policies.

43. One reason the federal government might reduce taxes is to

A. slow the rate of inflation.
B. slow a rapid rise in interest rates.
C. decrease business spending on plant and equipment.
D. increase consumer spending and stimulate the economy.

44. A government budget surplus exists when

A. tax revenues are greater than government spending.
B. government spending is decreased.
C. the national debt is increasing.
D. taxes are increased.

45. Which monetary policy would the Federal Reserve most likely adopt to fight high inflation during a period of low unemployment?

A. Raise the federal funds rate.
B. Increase the supply of money.
C. Increase federal government spending.
D. Lower the reserve requirements for banks.

STOP

IF YOU FINISH BEFORE TIME IS CALLED,
YOU SHOULD CHECK YOUR WORK ON THIS TEST.

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APPENDIX N

MS. LEVITT'S COMPARATIVE ECONOMIC SYSTEMS ACTIVITY

Comparative Economic Systems **Name:**_____

Go to https://www.cia.gov/library/publications/the-world-factbook/index.html

Geography	**North Korea**	**United States**	**Chad**
Natural Resources – How many and what types of natural resources are available?			
Land Use – What percentage of the land is arable (capable of being farmed)?			
People	**North Korea**	**United States**	**Chad**
Life Expectancy at Birth – How long are children born today expected to live?			
Total Fertility Rate – How many children does each woman have, on average?			
Literacy Rate – What percentage of people over the age of 15 can read and write?			
Government	**North Korea**	**United States**	**Chad**
Government Type – How are leaders elected?			
Government Spending as Percent of GDP (Budget Expenditures Divided by GDP).			
Military Spending as a Percentage of GDP.			

Economy	North Korea	United States	Chad
What type of Economic System?			
Economy Overview – What are the most serious economic problems facing each of these three nations?			
GDP Per Capita – What is the value of goods and services produced per person?			
Population Below Poverty Line – How many people live in poverty?			
Labor Force by Occupation – What percentage of workers is in agriculture?			
Industries – What are the primary industries? Are they primarily producing for consumer or government consumption?			
Agriculture Products – What are the primary agricultural goods produced?			
Electricity Production			
Telephones – Main Lines in Use			
Internet Service Providers			
Railways			
Paved Highways			
Airports with paved runways			

Comparative Economic Systems

Directions: Using the data collected in your research of each country, contrast each country by trait. Point out the differences between countries in each trait category. Complete the last column making an observation about the differences and what may be the reason for the differences.

TRAIT	NORTH KOREA	UNITED STATES	CHAD	OBSERVE
GEOGRAPHY				
PEOPLE				

408

TRAIT	NORTH KOREA	UNITED STATES	CHAD	OBSERVE
GOVERNMENT				
ECONOMY				

APPENDIX O

MS. LEVITT'S FEDERAL RESERVE SYSTEM WEBQUEST

Federal Reserve Webquest **Name:**_____

Go to http://www.stlouisfed.org/

Section I: Let's start by learning exactly what the Federal Reserve I - type "In Plain English" in the search bar in the top right corner. Click on the 2nd result - In Plain English | What Is The Federal Reserve | St. Louis Fed

Click through the slides to answer the following questions:

1. Why was the Federal Reserve created? When did this happen?

2. What is the job of the Board of Governors? How does the system work?

3. Why are Federal Reserve banks called "bankers' banks"?

4. What other purposes do the Federal Reserve fulfill?

5. Label the 12 Federal Reserve Banks (cities) and the shade in the regions they serve:

6. How does the Federal Reserve keep our economy healthy?

7. What is bank regulation? What is bank supervision?

8. How does the Federal Reserve provide financial services?

Go to Research & Data on the top menu. In the middle of the page you will see "FRED Feature/At a Glance". This contains graphs – we are going to analyze and compare information in the graphs.

1. Click on **CPI.** What does CPI stand for? What information does CPI give you? Looking at the data – What is the overall trend of the CPI? What do the gray areas represent?

2. Click on **Real GDP.** What does Real GDP stand for? What does GDP measure? What is the overall trend of GDP?

3. Click on **Civ. Unemploy. Rate.** What does unemployment measure? How does this graph compare to the first 2? What happens to the unemployment rate during recessions?

4. Why is the Federal Reserve a good place to get information on topics like CPI, GDP, & Unemployment?

Section III: Go to www.richmondfed.org/education/for_students/ - click on Interactive Games and Learning

1. Click on American Currency Exhibit – choose 4 types of currency. Describe how the currency looks for each time period.

   $

   $

   $

   $

2. Explain how U.S. currency has changed both over each of these time periods to today.

Section IV: Go to http://www.federalreserve.gov/faqs/faq.htm - Pick ANY 4 questions from the page. Write down the question & answer (you can summarize the answer in your own words). After you answer the question – tell me WHY that topic is important.

1.

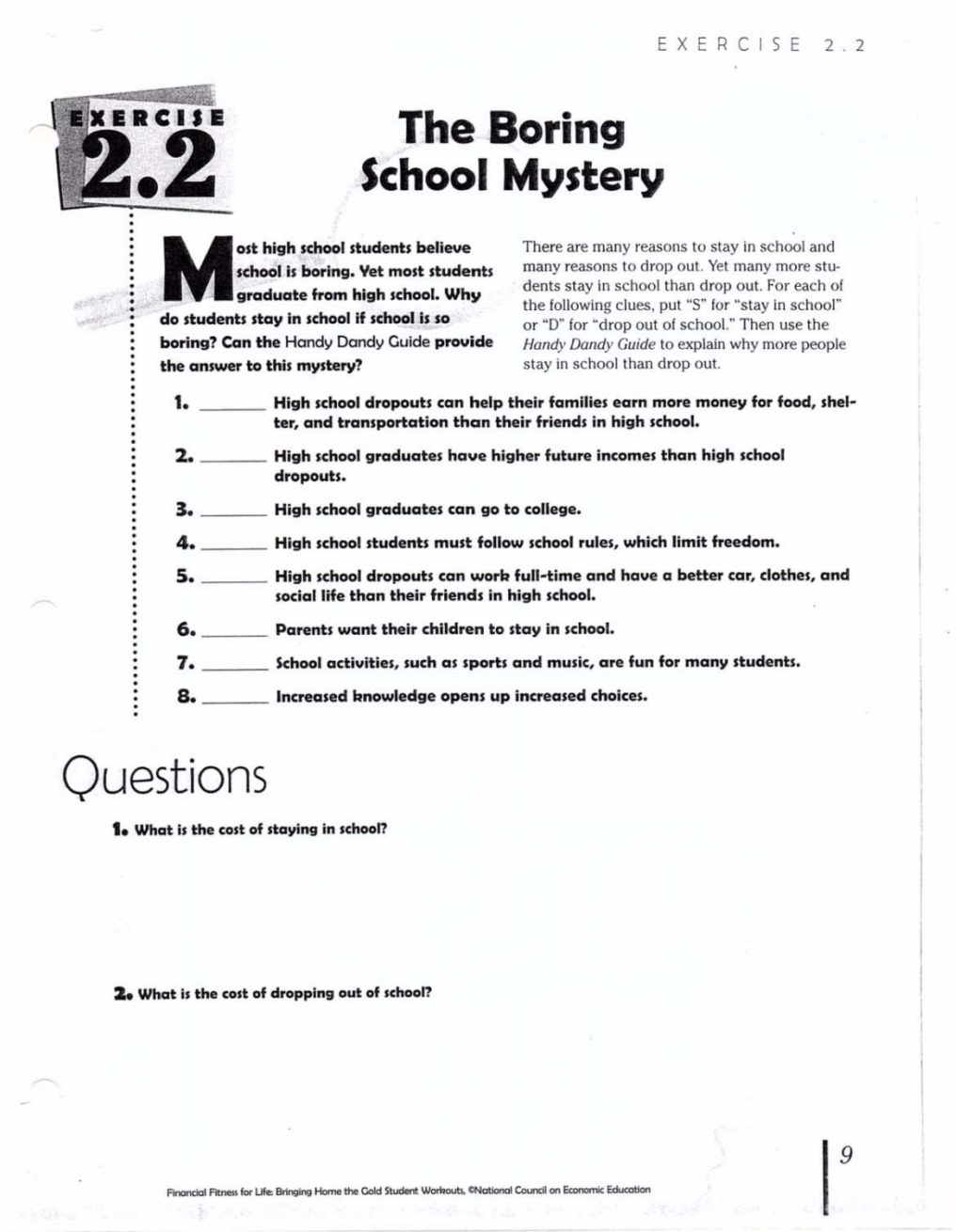
2.

3.

4.

APPENDIX P

MS. WILLIAMS' ECONOMIC WAY OF THINKING HOMEWORK ASSIGNMENT



EXERCISE 2.2

EXERCISE 2.2

The Boring School Mystery

Most high school students believe school is boring. Yet most students graduate from high school. Why do students stay in school if school is so boring? Can the Handy Dandy Guide **provide the answer to this mystery?**

There are many reasons to stay in school and many reasons to drop out. Yet many more students stay in school than drop out. For each of the following clues, put "S" for "stay in school" or "D" for "drop out of school." Then use the *Handy Dandy Guide* to explain why more people stay in school than drop out.

1. _____ **High school dropouts can help their families earn more money for food, shelter, and transportation than their friends in high school.**
2. _____ **High school graduates have higher future incomes than high school dropouts.**
3. _____ **High school graduates can go to college.**
4. _____ **High school students must follow school rules, which limit freedom.**
5. _____ **High school dropouts can work full-time and have a better car, clothes, and social life than their friends in high school.**
6. _____ **Parents want their children to stay in school.**
7. _____ **School activities, such as sports and music, are fun for many students.**
8. _____ **Increased knowledge opens up increased choices.**

Questions

1. **What is the cost of staying in school?**

2. **What is the cost of dropping out of school?**

9

Financial Fitness for Life: Bringing Home the Gold Student Workouts, ©National Council on Economic Education

Questions (continued)

3. **What is the incentive for staying in school?**

4. **How does the American economic system encourage people to graduate from high school?**

5. **Is going to high school voluntary or do you have no choice?**

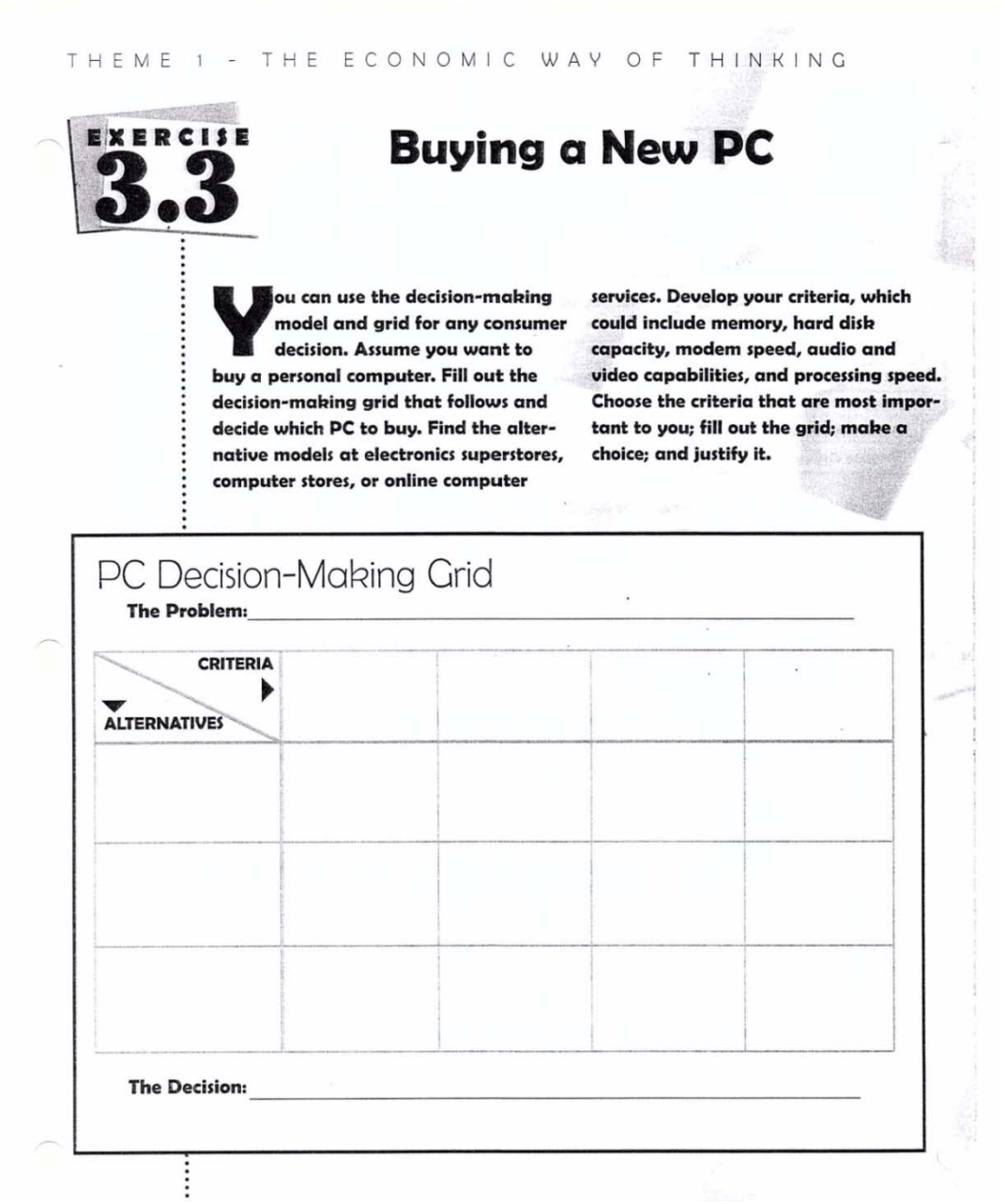
6. **Why do some students choose to drop out of school?**

7. **Why do most students choose to stay in high school and graduate?**

8. **What are the future consequences of a decision to drop out of school or stay in school?**

APPENDIX Q

MS. WILLIAMS' PACED DECISION MAKING MODEL COMPUTER ACTIVITY



THEME 1 - THE ECONOMIC WAY OF THINKING

EXERCISE 3.3

Buying a New PC

You can use the decision-making model and grid for any consumer decision. Assume you want to buy a personal computer. Fill out the decision-making grid that follows and decide which PC to buy. Find the alternative models at electronics superstores, computer stores, or online computer services. Develop your criteria, which could include memory, hard disk capacity, modem speed, audio and video capabilities, and processing speed. Choose the criteria that are most important to you; fill out the grid; make a choice; and justify it.

PC Decision-Making Grid

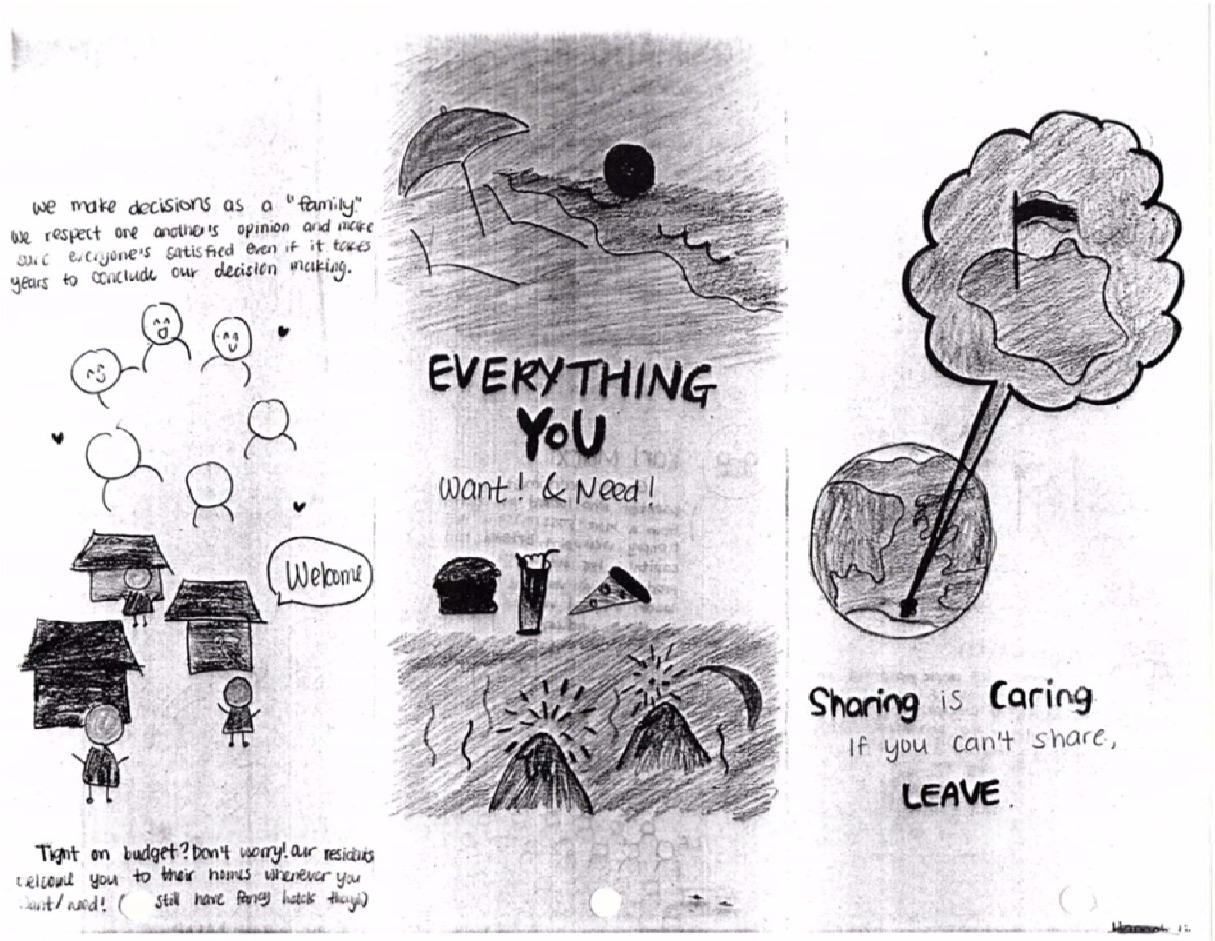
The Problem: _____

ALTERNATIVES \ CRITERIA				

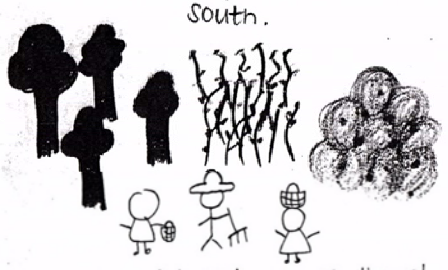
The Decision: _____

APPENDIX R

EXAMPLE OF STUDENT BROCHURES IN MS. LEVITT'S CLASS



We produce crops through farming.
We share our products with the South.



We produce fish and animals through fishing and hunting.
We share our products with the North.

MARKET Economy

Adam Smith

Believed that people would best benefit society by being allowed to pursue their own self-interest. He believed that most people understand that their best interests are tied up with the continued best interests of others, in the long run.

COMMAND Economy

An economy in which most economic issues of production and distribution are resolved through central planning and control.

centralized authority

Belief that centralized authority has greater efficiency

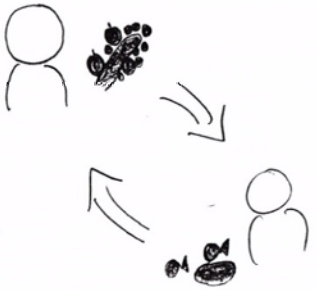
Command economies take the freedom to choose from the individuals in the society and transfers it to a smaller group.

Karl Marx

German economist and political scientist who looked at capitalism from a more pessimistic and revolutionary viewpoint. Believed that once the capitalist has set up the means of production, all value is created by the labor involved in producing whatever is being produced.

Market (Untraditional) Economy

Because on the north side of the island, we are able to produce crops, we share (trade) with the South while the South produces other goods we aren't able to produce easily.



*We do account "Many" [illegible]

APPENDIX S

COMIC STRIP EXAMPLE FROM MS. MILLER'S CLASS